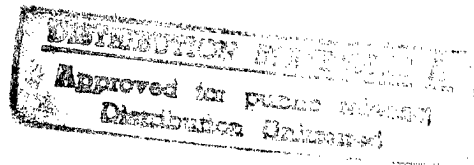


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USSR Report

HUMAN RESOURCES

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21 January 1983

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LABOR

SELECTED ARTICLES ON AGRICULTURAL LABOR, WAGES

Kolkhoz Wages

Kiev EKONOMIKA SOVETSKOY UKRAINY in Russian No 7, Jul 82 pp 56-62

[Article by Candidate of Economic Sciences Docent N. Lozovskiy (Vinnitsa): "Improve the Wages at Kolkhozes"]

[Text] During the past decade at the kolkhozes of the Ukraine a stubborn struggle was waged for the increase of the efficiency of agricultural production, a more appropriate solution to the question of the regulation of wages in the countryside was found (here what is meant is the transition to the guaranteed wage of kolkhoz farmers). At the same time the minimum wage in all the sectors of the national economy increased. In 1980 the average monthly wage had already increased (as compared with 1970) by nearly 1.4-fold and exceeded 168 rubles, while the pay of kolkhoz farmers had increased even more rapidly. The wage rates of tractor driver-machine operators increased appreciably, a minimum wage was introduced for the workers and employees who are employed in the production sectors, the conditions and procedure of crediting the additional payment in the production of sugar beets and several other agricultural crops were changed, the dependence of the amount of the wage on the end results of the work of the collective as a whole and each worker individually became closer.

The 26th CPSU Congress indicated the need to ensure greater unity in the payment for labor of equal complexity, difficulty and intensity at kolkhozes and state agricultural enterprises. "Our system of material and moral stimuli," L. I. Brezhnev stressed in the Accountability Report to the party congress, "should always and everywhere ensure the impartial and objective evaluation of the labor contribution of each person."

The 11th Five-Year Plan will be marked by a new gradual increase of the minimum wage to 80 rubles a month. The pay of kolkhoz farmers will increase by 20-22 percent. Here the increase of the dependence of wages on the end results of the work of the link, the detachment, the brigade, the farm and each kolkhoz farmer should be ensured.

At present the improvement of the systems, forms and types of material stimulation is being carried out at the kolkhozes of the Ukrainian SSR on the basis of the new recommendations on the wages of kolkhoz farmers, in the elaboration of which

workers of party and soviet organs, scientists, leading workers and specialists of kolkhozes are taking an active part.

In conformity with the new recommendations, great importance is being attached now to the increase of the stimulating role of the pay of kolkhoz farmers in the increase of labor productivity and in the development of social production. The wage has been made more closely connected with the end results of labor, the quality of the work and the efficiency of agricultural production. The stimulating role of the base pay has been increased.

A significant number of kolkhozes of the Ukraine pay for the labor of the kolkhoz farmers, who are employed in animal husbandry and in operations performed with horses and by hand, in accordance with the following wage rates (for the daily output norm during a 7-hour workday): category I--2.95 rubles, category II--3.15 rubles, category III--3.37 rubles, category IV--3.67 rubles, category V--4.05 rubles and category VI--4.65 rubles. At the same time a number of farms of the republic are still calculating the wages of the kolkhoz farmers, who are employed in piecework in plant growing and animal husbandry, according to lower rates (according to the categories--2.34 rubles, 2.4 rubles, 2.46 rubles, 2.54 rubles, 2.73 rubles and 3.1 rubles). All this is due to the limitedness at such kolkhozes of internal assets which are allocated for the pay of kolkhoz farmers. But these farms will gradually change over to higher wage rates, that is, ones which take into account the minimum wage in the amount of 80 rubles a month. The pay of tractor driver-machine operators is also being improved.

For the assurance of the greater dependence of the pay of kolkhoz farmers on the end results achieved by them, in the Ukrainian SSR the number of farms using the most advanced wage system--the job contract plus bonus system--is being increased from year to year. However, this system needs improvement. For at first at the kolkhozes of the republic the mechanized links with such wages were created only for the cultivation of individual crops. This was the first stage of the improvement of the organization of labor and its remuneration for the end results. At the second, current stage at the kolkhozes they began to create mechanized cost accounting detachments (links), which grow not one crop, but cultivate the entire crop rotation. Specific assignments on the production of output are reported to each such detachment and a limit of the expenditures on it are set for it. The pay of the kolkhoz farmers has been made dependent on the quantity and quality of the produced output and the achieved level of labor productivity. Here the job contract estimates per unit of output are established on the basis of the base pay fund and the amount of assets allocated for the additional payment for the end results of production.

In the overall system of the material stimulation of kolkhoz farmers the additional payment for the end results of their labor according to stable rates is such a form of material incentive, which performs the role of an additional payment beyond the guaranteed payment according to the rate. It ensures the connection of the pay of kolkhoz farmers with the quantity and quality of the output produced by them and the achieved level of labor productivity. And for this reason with the use of the additional payment according to stable rates the socialist principle of pay according to labor is implemented--with the consistent assurance of equal pay for equal labor not only within a single cost accounting production unit, but also in other detachments (links), brigades and even kolkhozes with similar production conditions.

When specifying the additional payments for the end production results the estimated base level of the production of output per hectare of planting of each agricultural crop is established as the average level for the past 5-year period. In turn, the amount of the base wage fund of kolkhoz farmers is calculated on the basis of the data of the flow sheet.

Let us examine this on the basis of the example of one of the leading farms of Cherkassy Oblast--the Rossiya Kolkhoz of Talnovskiy Rayon. From year to year this farm has fulfilled and exceeded the assignments on the production and sale of output, while at the same time achieving in so doing a decrease of its production cost and an increase of the profitability of agricultural production. A significant place is being assigned here to one of the important industrial crops--sugar beets. A flow sheet for the cultivation of sugar beets (with a base yield of 350 quintals per hectare), in which the amount of the fixed expenditures of labor per hectare of planting of this crop is specified as 210 man-hours, while the amount of the variable expenditures is specified as 150 man-hours, has been drawn up at the kolkhoz. During each man-hour, therefore, 0.97 quintal of output should be produced. The expenditures of wages of the beet growers according to the rate, according to the flow sheet, amount to 310 rubles per hectare (including 105 rubles of fixed expenditures and 205 rubles of variable expenditures), while the base pay for 1 man-hour in case of such a yield of sugar beets is 0.86 ruble (that is, 310 rubles divided by 360 man-hours). The fixed expenditures of labor in this case are not connected with the harvesting of the crop, while the variable expenditures increase in proportion to the increase of the yield of sugar beets.

Let us show the method of determining the additional payment for the end results of production using the example of one of the cost accounting production units, in which on the average during the years of the 10th Five-Year Plan 388 quintals of sugar beets were harvested per hectare.

First of all, here the index ($I_{\phi y}$) of the change of the actual yield as compared with the base yield, which is specified in the flow sheet, is calculated ($388 : 350 = 1.108$).

Then the variable expenditures of labor on the actual harvest obtained per hectare is determined according to the formula:

$$T_{\phi c} = T_{\phi c} \times I_{\phi y},$$

where $T_{\phi c}$ is the variable expenditures of labor per hectare in the case of the actual yield (man-hours); $T_{\phi c}$ is the variable expenditures of labor per hectare in the case of the base yield (150 man-hours). Thus, $T_{\phi c} = 150 \times 1.108 = 166.2$ man-hours. The total expenditures of labor per hectare in the case of the actual yield of sugar beets are calculated according to the formula:

$$T_{\phi o} = T_{\phi n} + T_{\phi c},$$

where $T_{\phi o}$ is the total expenditures of labor per hectare in the case of the actual yield (man-hours); $T_{\phi n}$ is the fixed expenditures of labor per hectare in the case of the actual yield (210 man-hours). Hence, $T_{\phi o} = 210 + 166.2 = 376.2$ man-hours.

Knowing the actual yield of sugar beets and the total expenditures of labor on the cultivation of each hectare of plantings of this crop, they proceed to the determination of the so-called standard level of labor productivity ($\Pi_{TH} = Y_{\Phi} : T_{\Phi}$). In our example it came to 1.03 quintals per man-hour (388 quintals : 376.2 man-hours). And then the index of the change of labor productivity is calculated by comparing the standard level of labor productivity with the base level: it is equal to 1.059 (1.03 : 0.97).

Furthermore, it is necessary to establish the amount of assets which are being spent on the wages of the beet growers for the output actually produced by them. The fixed expenditures on wages (according to the rate for operations) come to 105 rubles, while the variable expenditures were calculated according to the formula:

$$O_{\Phi C} = O_{6C} \times I_{\Phi Y},$$

where O_{6C} is the variable expenditures on wages according to the rate per hectare in the case of the base yield (205 rubles). Consequently, $O_{\Phi C} = 205 \times 1.108 = 227.1$ rubles.

The total base wage fund of the beet growers per hectare of plantings of sugar beets is equal to 332.1 rubles (105 rubles + 227.1 rubles).

The standard data obtained in this way concerning the expenditures of the labor of the beet growers and its remuneration per hectare of plantings of this crop made it possible to determine the level of remuneration of 1 man-hour with allowance made for the quantity and quality of the produced output and the labor productivity achieved by them. In this case the lump wage fund, on the basis of which the rates for the produced output are calculated, was calculated by multiplying the total base wage fund by the index of its increase due to the assets of the additional material stimulation of the beet growers. At the kolkhoz this index was taken to be equal to 1.25. Hence the lump wage fund of the beet growers per hectare of plantings of sugar beets in the case of their yield of 388 quintals per hectare came to 415 rubles 12 kopecks (332.1 rubles \times 1.25).

In the end the standard wage fund of the beet growers is determined with allowance made not only for the additional payment for the quantity and quality of the output produced by them, but also for the labor productivity achieved in the sector, and the stable rates for the end results of beet growing are also calculated. All the calculations in this case are made according to the formula:

$$H_{\Phi O} = T_{\Phi O} \times I_{\Pi} \times (1 + K_{\Pi\Pi} \times K_C) \times O_{T\Phi Y},$$

where $H_{\Phi O}$ is the standard wage fund of the beet growers with allowance made for the additional payment for the quantity and quality of the produced output and the level of labor productivity, which was achieved by them, in the case of the actual yield of sugar beets (rubles/hectare); I_{Π} is the index of the increase of the base pay of the beet growers (in our example, as was already noted, this index was taken at the level of 1.25); $K_{\Pi\Pi}$ is the coefficient of the increase of labor productivity in the sector [in the production unit being analyzed it came to 0.059 (1.059 - 1)]; K_C is the coefficient, which was used at the farm in question, of the ratio of the pay of the beet growers and the labor productivity in the case of the achieved yield of

sugar beets and the actual expenditures per hectare of their plantings (see Tables 1 and 2, in accordance with which it is equal to 0.7); O_{T6y} is the base amount of remuneration for 1 man-hour in the case of the base yield stipulated in the flow sheet [in our example the level of remuneration per man-hour in the case of a yield of 350 quintals per hectare was planned in the amount of 0.86 ruble (310 rubles : 260 man-hours)]. Hence, $H_{\Phi 0} = 421$ rubles 22 kopecks ($[376.2 \text{ man-hours} \times 1.25 \times (1 + 0.059 \times 0.7)] \times 0.86 \text{ rubles}$).

Table 1

Change of Labor Productivity and Wages in the Case of Stable Rates of the Additional Payment for the End Results of the Work of Beet Growers of the Rossiya Kolkhoz of Talnovskiy Rayon of Cherkassy Oblast

Indicators	Level of yield of sugar beets (quintals per hectare)					
	350	388	400	450	500	560
Index of change of yield of sugar beets as compared with base (planned) indicator. . .	1.000	1.108	1.142	1.286	1.428	1.600
Index of change of expenditures of labor per hectare of plantings of sugar beets .	1.000	1.046	1.057	1.119	1.178	1.250
Index of change of labor productivity of beet growers.	1.000	1.059	1.080	1.149	1.212	1.280
Remuneration per man-hour:						
a) according to base rates (rubles).	0.86	0.88	0.89	0.92	0.94	0.96
percent of base level	100	102.5	103.2	106.2	108.9	111.8
b) according to job contract rates with allowance made for additional payment of 25 percent for quantity and quality of produced output (rubles).	1.08	1.10	1.11	1.14	1.17	1.20
percent of base level	100	102.5	103.2	106.2	108.9	111.4
c) according to job contract rates with allowance made for additional payment of 25 percent for produced output and achieved level of labor productivity of beet growers (rubles)	1.08	1.12	1.14	1.18	1.21	1.24
percent of base level	100	104.1	105.5	109.2	112.7	114.9
Coefficient of ratio of wages and labor productivity	X	0.70	0.70	0.65	0.60	0.55
Stable rates of additional payment per quintal of produced output and achieved level of labor productivity of beet growers (kopecks)	X	23	23	23	23	23

Table 2

Scale of Coefficients of the Ratio of Wages and Labor Productivity for Determining
the Amount of the Additional Payment for the End Results of the Production of Sugar Beets

Индекс изменения урожайности сахарной свеклы (2)	(1) Индекс увеличения затрат труда в расчете на 1 га посевов сахарной свеклы												
	1,00	1,05	1,10	1,15	1,20	1,25	1,30	1,35	1,40	1,45	1,50	1,55	1,60
1,00	×	—	—	—	—	—	—	—	—	—	—	—	—
1,05	0,70	×	—	—	—	—	—	—	—	—	—	—	—
1,10	0,70	0,70	×	—	—	—	—	—	—	—	—	—	—
1,15	0,65	0,70	0,70	×	—	—	—	—	—	—	—	—	—
1,20	0,65	0,65	0,70	0,70	×	—	—	—	—	—	—	—	—
1,25	0,60	0,65	0,65	0,70	0,70	×	—	—	—	—	—	—	—
1,30	0,60	0,60	0,65	0,65	0,70	0,70	×	—	—	—	—	—	—
1,35	0,55	0,60	0,60	0,65	0,65	0,70	0,70	×	—	—	—	—	—
1,40	0,55	0,55	0,60	0,60	0,65	0,65	0,70	0,70	×	—	—	—	—
1,45	0,50	0,55	0,55	0,60	0,60	0,65	0,65	0,70	0,70	×	—	—	—
1,55	0,50	0,50	0,55	0,55	0,60	0,60	0,65	0,65	0,70	0,70	×	—	—
1,50	0,50	0,50	0,50	0,55	0,55	0,60	0,60	0,65	0,65	0,70	0,70	×	—
1,60	0,50	0,50	0,50	0,50	0,55	0,55	0,60	0,60	0,65	0,65	0,70	0,70	×

Key:

1. Index of the increase of expenditures of labor per hectare of plantings of sugar beets
2. Index of the change of the yield of sugar beets

The generalization of the data cited in the corresponding literature attests that the minimum limit of the increase of the wage for each percentage increase of labor productivity should be not less than 0.5 percent, while the maximum limit should be not more than 0.9 percent. In each specific case these indicators depend on the labor intensiveness of the cultivation of each specific crop, on the level of economic development of the farm and on other factors. According to our calculations, in the case of a different ratio of the yield of sugar beets and the expenditures of labor per hectare of their plantings these indicators should be differentiated, which ensures the use of stable--even in the case of different levels of the yield of sugar beets--rates of the additional payment for the end results of production in the sector, the amount of which was determined according to the formula:

$$C_{pd} = (H_{\phi 0} - O_{\phi 0}) : Y_{\phi},$$

where C_{pd} is the stable rate of the additional payment for each quintal of produced output and the labor productivity achieved by the beet growers (kopecks/quintal); $O_{\phi 0}$ is the total base wage fund of the beet growers per hectare of plantings of sugar beets in the case of their given yield. Thus, $C_{pd} = (421 \text{ rubles } 22 \text{ kopecks} - 332 \text{ rubles } 10 \text{ kopecks}) : 388 \text{ quintals} = 23 \text{ kopecks}$.

The same calculations were also made for other levels of the yield of sugar beets, and on their basis, in turn, the amounts of the remuneration per man-hour were calculated and stable rates of the additional payment to the beet growers for the end results of their work were established (see Table 1). At the same time the need arose to elaborate a scale of coefficients of the ratio of the wages of the beet growers and the labor productivity for the determination of the amount of the additional payment to them for the end results of the production of sugar beets (see Table 2).

It should be noted that in the practical work of kolkhozes there are considerably more versions of the ratio of the yield of sugar beets and the expenditures of labor per hectare of their plantings than is envisaged by Table 1. Thus, for example, the yield of sugar beets came to 490 quintals per hectare (that is, it increased as against the base yield by 40 percent), while the expenditures of labor per hectare of their plantings increased by 16 percent. In this case it is advisable to determine the actual level of the wages of beet growers with allowance made for the additional payment for the end results of production in accordance with the formula previously elaborated by us:

$$I_0 = \{ [I_y K_c + I_3 (1 - K_c)] \times I_{\Pi} \} : I_3,$$

where I_0 is the index of the increase of the actual remuneration per man-hour of the beet growers with the additional payment for the quantity and quality of the output produced by them and the achieved level of labor productivity in the sector; I_y is the index of the change of the yield of sugar beets (1.4); I_3 is the index of the change of the expenditures of labor per hectare of plantings of sugar beets (1.16); K_c is the coefficient of the ratio of the wages of beet growers and the labor productivity (in accordance with the scale of the ratio of the wages of beet growers and the labor productivity, which was elaborated by us, it was established that given an index of the yield of sugar beets of 1.4 and the expenditures of labor per hectare of their plantings of 1.16 K_c is equal to 0.6); I_{Π} is the index of

the increase of the base pay of the beet growers (in our example, as is known, it was planned to increase the base wage fund of the beet growers by the amount of the additional payment in the amount of 25 percent, that is, I_{Π} is equal to 1.25). Consequently, in the case of the achievement at the farm being analyzed by us of a yield of sugar beets of 490 quintals per hectare it is necessary to increase the wages of the beet growers with allowance made for the additional payment for the end results of production not by 25 percent (as was planned), but by 39.8 percent, which is confirmed by the following calculations:

$$\{[1.4 \times 0.6 + 1.16(1 - 0.6)] \times 1.25\} : 1.16 = 1.398.$$

The overall level of the wages of the beet growers for the cultivation of 1 hectare of plantings of sugar beets with allowance made for the output actually produced by them and the labor productivity achieved in the sector should be equal to 504 rubles $[(1.398 \times 420 \text{ man-hours} \times 0.86 \text{ rubles})$; 0.86 is the base pay for 1 man-hour in the case of the base yield of sugar beets]. If we subtract from this amount the base wage fund of the beet growers in accordance with the standard expenditures on the yield of sugar beets, which was achieved by them, that is, 392 rubles $(105 \text{ rubles} + 205 \text{ rubles} \times 1.4)$, the difference obtained in this way in the amount of 112 rubles $(504 \text{ rubles} - 392 \text{ rubles})$ will also constitute the fund of the additional payment for the end results in beet growing. In terms of 1 quintal of produced output this will correspond to the amount of the stable rate--23 kopecks per quintal of sugar beets $(120 \text{ rubles} : 490 \text{ quintals} = 0.23 \text{ ruble})$.

The emergence of cost accounting production units with the new form of wages is a result of scientific and technical progress and the extension of cost accounting relations at kolkhozes. Back at the beginning of the 10th Five-Year Plan 43 multiple-skill mechanized detachments, links and brigades worked at 20 kolkhozes of Cherkassy Oblast. In all 27,300 hectares of plantings of various agricultural crops and 289 tractors with the appropriate set of agricultural machinery were attached to them. A total of 600 machine operators worked within these subdivisions. At them 62 percent more gross output was produced per machine operator than in the production units, in which wages for the amount of performed work without consideration of the end results of production were used. The other economic indicators also improved significantly. Thus, the material and monetary expenditures per 100 rubles of value of the gross output decreased in such detachments by 20 percent. Whereas previously the ratio between the increase of the labor productivity of the machine operators and the wages was violated, with the increase of the productivity of their labor by 1 percent the wages increase by 0.5-0.7 percent.

Such production collectives, in which wages for the end results of the work are in effect, also exist in other oblasts of the Ukraine.

The economic effectiveness of the new form of wages, for example, at the Kolkhoz imeni Lenin of Bershadskiy Rayon of Vinnitsa Oblast, is attested to by the fact that the average annual production of the output of plant growing at this farm increased in 3 years under the new system of wages (as compared with the same period under the previous system of them) by 32 percent with the simultaneous decrease of the number of tractor driver-machine operators from 68 to 53. The other economic indicators of the farm also improved significantly: the net income increased by more than twofold, the level of profitability of agricultural production increased from 15.7 to 34.8 percent. Whereas under the form of wages, which was previously

in effect, the output-capital ratio decreased from year to year, now the production of gross output per ruble of fixed production capital has increased by 12 percent.

The practical experience of the work of mechanized detachments, which use the new form of wages, confirmed that in these production units the role of each worker is increasing substantially, and his attitude toward the land and other means of production is changing. Now all the machine operators are interested in producing more and more agricultural output of high quality and with fewer expenditures of labor and assets.

All this once again attests to the fact that at the present stage of the development of kolkhoz production the system of wages for the end results of the work is the most advanced one. Therefore the 26th CPSU Congress recommended that in the area of wages the increase of the dependence of the amounts of wages on the end results of the work, labor productivity and the quality of the output being produced be ensured. At the same time it should be noted that the most misunderstandings in the practical work of kolkhozes arise with regard to the question, in what amounts to advance funds to kolkhoz farmers and how to distribute among them the additional payment for the end results of the work. For the periodic form of wages (in the form of a monthly advance) to a certain extent weakens the interdependence of the level of the wage with the amount of performed work, and the amount of this advance also depends on the method of its calculation.

The correct choice of the form of the advancement of funds is of substantial importance. It is well known that in the case of the piece-rate wage the amount of the wages of kolkhoz farmers depends on the amount of work performed by them. Therefore each member of the production unit is interested in doing as much more as possible, while he worries little about the quality of the work, that is, the amount of the produced output. And the situation is completely different in the case of the job contract plus bonus wage system: the wage of each person depends in this case on the quantity and quality of the produced output.

In the case of the periodic advancement of funds it is very important for the output norms to be fulfilled and exceeded. Therefore it is necessary to coordinate the amounts of the advance payment and the additional payment for the end results of the work with the fulfillment of the shift output norms (especially during the first years of the formation of the collective). The skill of the machine operators should also be taken into account.

At the Mayak Kolkhoz of Zolotonoshskiy Rayon of Cherkassy Oblast the advancement of funds is carried out in proportion to the number of worked man-days, while the amount of the advance payment for field work is larger than for other tractor-performed operations. Here the skills level of the machine operators is also taken into account without fail. The amount of the wage of each machine operator for the end results of his work is credited with allowance made for the number of shift norms, which were fulfilled by each member of the detachment (or link) during the entire year.

Some kolkhozes of Vinnitsa Oblast used a slightly different procedure of combining the advancement of funds with the additional payment for the end results of the work of tractor drivers. Thus, for example, at the Kolkhoz imeni Lenin of

Vershadskiy Rayon they issue the advance payment to machine operators during the year, as a rule, for the number of days worked by each worker individually and at the same time keep an account of the number of standard shifts done by them. At the end of the year they add to the man-days worked by each machine operator the number of standard shifts done by them and divide the obtained total by two. In the opinion of specialists and the very performers of individual types of jobs, such a procedure of the consideration of the worked time and the amount of performed work makes it possible, on the one hand, to take into account the labor activeness of each machine operator and the intensity with which he works, and, on the other, to determine the amount of the material reward of each worker subject not only to the time worked by him, but also to the level of labor productivity, which was achieved by him.

At the May (1982) CPSU Central Committee Plenum it was emphasized that the duty of all workers of kolkhoz production is to utilize completely the possibilities of material stimulation for the successful assimilation of new equipment and production capacities, the extensive introduction of industrial technologies for the purposes of not only fulfilling, but also considerably exceeding their plan assignments and socialist obligations. Precisely these principles should now be taken as the basis of the material incentive of labor collectives for the cultivation of a number of agricultural crops and the production of the products of animal husbandry (especially at livestock complexes and large specialized farms).

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Wages of Specialists

Moscow SEL'SKAYA ZHIZN' in Russian 12 Oct 82 p 4

[Article by V. Protasov, deputy chief of the Main Administration for Labor and Social Problems of the USSR Ministry of Agriculture: "What Is New in the Wages of Specialists"]

[Text] In conformity with the decisions of the May (1982) CPSU Central Committee Plenum decisions have been made on a new procedure of the payment of wages and bonuses to the managerial personnel and specialists of sovkhozes. Many of our readers have asked that an account of this be given.

A number of major additional steps, which are aimed at increasing the material interest of the managers, specialists and employees of sovkhozes in the increase of the production of output and their attachment to the countryside, were taken by Decree No 438 of the CPSU Central Committee and the USSR Council of Ministers of 24 May 1982, "On the Further Reinforcement of Kolkhozes and Sovkhozes With Managerial Personnel and Specialists, the Increase of Their Role and Responsibility in the Development of Agricultural Production." The salaries for them have been increased. In place of the existing eight wage groups of managerial personnel and specialists of sovkhozes and other state agricultural enterprises six groups have been established.

Now the salary of the director of a large farm, which is assigned to the first wage group, has been set in the amount of 330-360 rubles a month, while that of

the manager in charge of a farm, which is assigned to the sixth wage group, has been set in the amount of 230-250 rubles a month.

The salaries of the chief specialists (agronomists, engineers, livestock experts, veterinarians, economists) at farms, which have been assigned to the first wage group, have been increased from 230-250 rubles to 290-310 rubles a month, the chief accountants--from 190-210 to 290-310 rubles a month. At the farms, which are assigned at present to the sixth wage group, the chief specialists and chief accountants will receive 210-220 rubles a month.

The salaries for senior specialists (agronomists, livestock experts, veterinarians, engineers of all specialties, economists, legal advisers, forest and land improvement specialists, dispatchers), whose salaries are set regardless of the group of the farm, have been increased from 130-150 rubles to 190 rubles a month.

For rank and file specialists (agronomists, livestock experts, veterinarians, engineers of all specialties, economists, legal advisers, forest and land improvement specialists, dispatchers) the new salaries are differentiated subject to the category assigned to each specialist. For the specialists, to whom category I will be assigned, the salary will come to 180 rubles a month; for specialists of category II--160 rubles; for specialists without a category--140 rubles a month. At present the salaries for rank and file specialists have been set in the amount of 110-140 rubles a month. For technicians of category I--130 rubles, and for technicians of category II--120 rubles a month.

The salaries of the managers of departments, farms and agricultural sections and of the chiefs of shops have been increased in the departments, farms, sections and shops, which have been assigned to the first wage group, from 190-200 to 250-280 rubles a month, while in the departments, farms, sections and shops, which have been assigned to the fifth group (the smallest in the production volume), they have been increased from 130-150 rubles to 190-210 rubles a month.

The salaries of employees and junior service personnel have been increased substantially. The salaries for senior accountants and merchandising specialists, who do not have a higher education, have been increased from 90-110 rubles to 145-165 rubles a month, while those for senior accountants and merchandising specialists, who have a higher specialized education, have been increased accordingly from 105-130 rubles to 190 rubles a month; accountants--from 85-90 rubles to 130-150 rubles a month. The salaries for other employees and junior service personnel of sovkhozes have also been increased significantly.

The new salaries of managerial personnel, specialists and employees of sovkhozes and other state agricultural enterprises are being introduced: in the regions of Siberia, the Far East, the Urals, in the Central Chernozem region and the Nonchernozem Zone of the RSFSR as of 1 January 1983; in the other regions of the RSFSR, in the Belorussian SSR and the Kazakh SSR as of 1 January 1984; in the remaining regions of the country as of 1 January 1985.

The procedure, in accordance with which it is permitted to increase by 10-15 percent the salaries of managerial personnel and specialists, who perform their official duties as a whole with respect to the sovkhoz, remains in effect, if the volume of the sale of agricultural products of this farm exceeds by 50 percent or more

the volume of the sale of products, which is envisaged for the first group of sovkhoses with respect to the wages of the managerial personnel and specialists. The salaries of some managerial personnel and specialists can be increased, while those of others can be decreased by 10 percent (in the case of the approval of the manning table at the beginning of the year or in the case of hiring for a job) within the limits of the established wage fund.

Thus, at the largest sovkhoses, at which the volume of sales exceeds by 1.5-fold or more the volume of sales, which has been set for sovkhoses assigned to the first group with respect to the wages of managerial personnel and specialists, the salary of the director of the sovkhos can be set at up to 450 rubles a month.

In conformity with Decree No 435 of the CPSU Central Committee and the USSR Council of Ministers of 24 May 1982, "On the Steps on the Increase of the Material Interest of the Workers of Agriculture in the Boosting of the Production of Output and the Increase of Its Quality," an increment in the amount of up to 50 percent of the salary (instead of 30 percent in the past) for great skill, the combining of positions and the performance of the set amount of work with a smaller number of workers can be established for engineering and technical personnel and employees at the discretion of the director of the farm and with the consent of the trade union committee. The increment for great skill is set within the limits of up to 1 percent of the wage fund of the farm and can be paid by means of the saving of this fund.

The payment of bonuses is stipulated for the managerial personnel and specialists of sovkhoses and other state agricultural enterprises.

They are paid bonuses in accordance with the results of the work during the year:

a) for each percent of the obtained increase of the volume of sales (production) of agricultural products as compared with the average annual level, which was achieved during the preceding 5 years, in the amount of up to 2 percent of the annual wage earnings from salaries;

b) for each percent of the obtained increase of the profit as compared with the average annual level, which was achieved during the preceding 5 years, also in the amount of 2 percent of the annual wage earnings from salaries;

c) for the obtaining of a profit, and at unprofitable sovkhoses for the decrease of the loss in the amount of 5 percent of the amount of the loss as compared with its average annual amount during the past 5 years, on the condition of the increase of the production of agricultural products as compared with this period.

Other additional types of incentives for individual crops and indicators are also envisaged.

The total amount of all types of bonuses to the managerial personnel and specialists of sovkhoses and other state agricultural enterprises cannot exceed 60 percent, and at sovkhoses of the virgin land regions 70 percent, while for all other workers 40 percent of the annual wage earnings which are credited to salaries. For the managers and specialists of sovkhoses, to whom bonuses are also paid for exceeding the plan of the sale of sugar beets, the total amount of the bonuses is being increased to 80 percent of the annual wage earnings which are credited to

salaries, on the condition of the fulfillment of the plan of the purchases of sugar beets by 115 percent and more.

Moreover, Decree No 435 of the CPSU Central Committee and the USSR Council of Ministers of 24 May 1982 introduced in addition the payment of bonuses to the managerial personnel and specialists of sovkhozes:

for the assurance of the profitability and the changeover of the farm, which was included in the list of sovkhozes and other state agricultural enterprises with a low profitability and unprofitable ones, from preferential to the general conditions of financing in the amount of the salaries for 3 months;

for each percent of the increase of the total profitability of the farm as compared with the level, which was achieved during the preceding 5 years, in the amount of the salary for 0.25 month a year.

The total amount of these bonuses, which are paid to a worker, should not exceed the salaries for 5 months a year. These bonuses are paid in addition to the previously set maximum amounts.

The indicated conditions of the payment of wages and bonuses, which have been set for sovkhozes, are also recommended for use at kolkhozes.

Job Contract Plus Bonus

Moscow EKONOMICHESKAYA GAZETA in Russian No 41, Oct 82 p 8

[Article by G. Frolova, chief economist of the Kolkhoz imeni I. Kochkorbayev (Issyk-Atinskiy Rayon of the Kirghiz SSR): "The Impact of the Job Contract Plus Bonus Wage"]

[Text] Among the steps outlined by the May (1982) CPSU Central Committee Plenum the improvement of the forms of the stimulation of labor holds the most important place. In a report at the plenum L. I. Brezhnev stressed: "The main thing here consists in the fact that each worker would see, would perceive the direct, simple and clear connection between what he has done and what he has earned."

At our farm the job contract plus bonus system began to be used long ago. And we are constantly improving it and are changing all the basic subdivisions--links, brigades and detachments--over to the new form of organization and payment. The job contract plus bonus system aims the workers toward the achievement of better end results. A statute on wages, which was approved by a general meeting and in which the specific conditions of the basic and additional wages and the payment of bonuses to the kolkhoz farmers are stipulated, has been elaborated at the kolkhoz. Here the quantity and quality of the produced output, the increase of the yield of agricultural crops and the productivity of animals and the use of the land, equipment, monetary assets and manpower resources are taken into account.

Prior to the introduction of the job contract system we had ordinary brigades and links. Thus, four tractor and field-crop brigades operated in field-crop growing. The entire set of crops, which were planted at the kolkhoz, were attached to them. Beginning in the late 1970's specialized brigades were created: two of them for

the cultivation of sugar beets, one brigade for fodder production and one orchard and vegetable brigade. In animal husbandry there are five farms: a dairy products, a sheep raising, a hog raising, a poultry raising and a horse breeding farm.

A mechanization shop, in which there are standard machine workshops, a maintenance station, a vehicle fleet, a mechanized threshing floor, a shop for the preparation of granulated vitaminous fodders and a fodder shop for the processing of coarse and succulent fodders, has been created.

The remuneration of labor in all the sectors of kolkhoz production is made according to the job contract plus bonus system, according to differentiated rates for the output with allowance made for the yield of crops and the productivity of animal husbandry. At first we introduced the job contract plus bonus system of payment for the leading crop--sugar beets. Then we began to use it for other crops and in animal husbandry. The periodic advancement of funds to the kolkhoz farmers, who are employed in the cultivation of sugar beets, vegetable and melon crops and potatoes, as well as in sheep raising, is being used.

During the period of the introduction of the job contract plus bonus system of wages as a result of the increase of the planned production volumes in accordance with the method previously in effect the rates for products began to decrease. This adversely influenced the interest of the kolkhoz farmers. In order to rectify the situation, at times it was necessary to increase without reason the rates, to increase the payment for the above-plan output from 50 to 100 percent. Of course, it is impossible to regulate wages in this way.

For the purpose of increasing the interest of the kolkhoz farmers in the increase of the yield of crops and the productivity of animals and the more efficient use of the land, the technicians began in 1978 to use a more advanced payment for labor according to differentiated rates subject to the yield of the fields and the productivity of the animals. If, for example, the operators of the dairy farm achieve a milk yield per forage cow a year of 2,601 to 2,700 kg, in the case of the base fatness they are credited with 2 rubles 40 kopecks per quintal of milk of the first grade, in excess of 3,000 kg--2 rubles 80 kopecks, while in the case of the exceeding of the 4,000-kg mark--3 rubles 25 kopecks. The same principle is observed when paying for the labor of other workers of the farm. Thus, it is now profitable for the livestock breeders to increase the productivity of the dairy herd.

For the corn growers subject to the yield the payment ranges from 2 rubles 30 kopecks to 2 rubles 79 kopecks per quintal of output and from 1.5 to 4 kg of payment in kind. The use of differentiated rates of payment is promoting the increase of production efficiency. Last year we obtained on the average per hectare of grain corn 53.5 quintals, perennial grasses for hay--91.5 quintals. But some collectives achieved even higher indicators. Thus, the link of Kalyk Usupov for the cultivation of corn harvested from each of the 73 hectares 65 quintals of grain. The expenditures of labor per quintal came to less than 1 man-hour, while for the kolkhoz on the average they are equal to 1.82 man-hours, the production cost for the kolkhoz is equal to 7.18 rubles, while in the link of Usupov it is equal to 4.76 rubles.

During the vegetation period the members of the link receive an advance payment, while after the completion of all the field work and the harvesting of the crop

they received a final settlement. The advance payment during the year came to half of the wage fund. Thus, the wage of link leader Kalyk Usupov amounted during the year to 3,076 rubles, while during the year he was given an advance payment in the amount of 1,531 rubles and upon the final settlement 1,545 rubles, or 11 rubles 39 kopecks per worked man-day.

Here is another example. A total of 570 young ewes were attached to the shepherd link of M. Semenov. It was planned to obtain from each of them 3.5 kg of wool, 100 lambs from 100 ewes, 570 in all. In fact 3.72 kg of wool and 115 lambs per 100 ewes were obtained. The annual fund of the payment for all the output came to 4,849 rubles, an advance payment of 2,242 rubles was issued, while the remainder was included in the final settlement. Differentiated rates for the increase of the productivity of the animals were also used here.

Since the orientation of the farm is animal husbandry, we are devoting much attention to fodder production. A brigade for fodder production, to which more than 1,000 hectares of perennial grasses, 700 hectares for the planting of grain corn and the same number for silage and more than 200 hectares of cultivated pastures are attached, was created back in 1976. In the brigade there are 43 machine operators and 18 irrigation workers.

The organization of a specialized brigade for the production of fodders and the introduction of a differentiated payment with the use in the links of the periodic advancement of funds yielded a positive impact. The yield of perennial grasses increased from 57 quintals per hectare in 1976 to 91.5 quintals last year (in dry hay), grain corn--from 24 to 53.5 quintals, silage corn--from 228 to 351 quintals per hectare. The harvest of cereals per hectare increased from 18.8 to 27.3 quintals, while that of irrigated cereals increased from 25 to 36 quintals. The milk yield per forage cow increased by 470 kg. The production of gross output per 100 hectares of farmland increased from 6,900 to 10,700 rubles. The profitability of production increased. The net income rose from 1,692,000 to 2,343,000 rubles. And the advanced forms of the organization of labor and wages held not the last place.

This year here is a dry one. But the workers of the farm are displaying a high level of organization. And we hope not only to fulfill, but also to exceed the set assignments on the production and sale of products to the state.

Productivity, Profitability

Moscow EKONOMICHESKAYA GAZETA in Russian No 44, Oct 82 p 16

[Article: "The Stimulation of Productivity and Profitability at Sovkhozes"]

[Text] A set of additional steps on increasing the interest of the workers of sovkhozes and other state agricultural enterprises in increasing the production of output and raising labor productivity and the profitability of production is outlined in the materials of the May (1982) CPSU Central Committee Plenum. In letters to the editorial board the readers ask for an account to be given of the changes which have been made in the system of incentives to the workers of sovkhozes.

The Agriculture Department of the USSR State Committee for Labor and Social Problems gives advice.

[Question] What new things have been introduced in the system of stimulation of the combining of occupations of workers?

[Answer] For the purposes of increasing the material interest of the labor collectives of sovkhozes and other state agricultural enterprises in expediting the increase of labor productivity and decreasing the turnover of personnel the directors of the farms have been granted the right with the consent of the trade union committees to pay by means of the saving, which was obtained as against the set standard or planned wage fund, additional payments to workers for the combining of occupations, the enlargement of the service area and the performance of the set amount of work with a smaller number of workers. The amount of the additional payment is up to 70 percent of the base pay for the main job (previously such an additional payment was set in the amount of up to 50 percent of the base pay) subject to the difficulty, nature and amount of work being performed and the degree of utilization of the working time.

The additional payments for the combining of occupations, the enlargement of the service area and the performance of the set amount of work with a smaller number of workers can be decreased or completely eliminated in case of the revisions of the norms in accordance with established procedure, as well as in case of the worsening of the quality of the work. The worker should be warned in writing about the decrease or elimination of the additional payments no later than a month in advance. If the indicated measures are implemented on the basis of the suggestions of the workers receiving the additional payments, these additional payments are maintained for 6 months following the introduction of the new standards of labor expenditures.

Additional payments for the combining of occupations are not established in those instances when the job being combined is stipulated in the norms of labor expenditures, stems from the labor contract (is included among the duties of the worker) or is assigned to the worker in accordance with the procedure set by legislation in connection with an inadequate workload as against the prevailing norms of labor expenditures for the main job.

[Question] How is the increase of the labor productivity of engineering and technical personnel and employees being stimulated?

[Answer] Salary increments in the amount of up to 50 percent of the salary are being paid to the engineering and technical personnel and employees of sovkhozes for great skill, the combining of positions and the performance of the set amount of work with a smaller number. The increments for great skills are established within the limits of up to 1 percent of the wage fund.

The increments for the combining of positions and the performance of work with a smaller number are paid on the condition of the actual freeing of a number as against the intersectorial and sectorial standards of the number, the norms of service, the standards of labor expenditures, the model staffs and the staff standards, which have been approved by the superior organizations, by means of the saving of the wage fund from the release of a number.

Only those workers, whose salary is set by the director of the sovkhos, have the right to receive increments. The managerial personnel of the sovkhoses (the directors, their deputies, the chief specialists, the heads of shops--the chief specialists, the chief accountant), as well as legal advisers (senior legal advisers) are such workers. The additional payments to the salaries for the combining of positions, the enlargement of the service areas and the performance of the set amount of work with a smaller number of workers can be reduced or completely eliminated in case of the revision of the staff standards in accordance with established procedure, as well as in case of the worsening of the quality of the work. The worker should be warned in writing of the decrease or elimination of the additional payments no later than a month in advance.

Just as the additional payments to workers, the additional payments to engineering and technical personnel for the combining of positions are not established in those instances when the job being combined is stipulated in the norms of the labor expenditures, stem from the labor contract (is included among the duties of the worker) or is assigned to the worker in accordance with the procedure established by the legislation in connection with an inadequate workload as against the prevailing norms of labor expenditures for the main job.

[Question] What additional steps on increasing the interest of managerial personnel and specialists in ensuring the profitability of production have been organized?

[Answer] Particular importance is being attached to the question of increasing the profitability of agricultural production. With allowance made for this, for the purpose of increasing the material interest of the managerial personnel and specialists of sovkhoses and other state agricultural enterprises in increasing the profitability of the farms the payment of an additional bonus in accordance with these indicators has been introduced for them.

The payment of a bonus to the managerial workers and specialists in accordance with the basic indicators of the economic activity is made for the increase of the sale (production) of agricultural products and the profit as compared with the average annual level, which was achieved during the preceding 5 years, in the amount of up to 2 percent of the annual wage earnings on salaries (for each of the indicated indicators) and for the obtaining of a profit (at unprofitable farms, for the decrease of the loss as against the average annual amount during the preceding 5 years). The source of the payments of bonuses for the increase and the obtaining of a profit is 2.5 percent from the amount of the profit of the farm. The bonuses for the increase of sales are paid by means of the wage fund of the farm.

The maximum amount of the bonuses cannot exceed the salary of 7.2 months, and in virgin land regions the salary of 8.4 months a year per worker, including for the increase and the obtaining of a profit--respectively the salaries for 5 and 6 months, while for the obtaining of a profit--the salaries of 2 months a year per worker.

In addition to the indicated bonuses an incentive to the managerial personnel and specialists of farms for the assurance of the profitability and the changeover of the farm, which has been included in the list of farms with a low profitability and unprofitable farms, from preferential to the general conditions of financing

has been introduced--in the amount of the salaries for 3 months per worker a year. This bonus to the workers of a given farm can be paid only only following the changeover to the general conditions of financing.

The payment of a bonus is also made for each percent of the increase of the total profitability of the farm as compared with the level which was achieved during the preceding 5 years--in the amount of the salary for 0.25 month.

The bonuses for the assurance and the increase of the profitability are paid by means of the wage fund of the farm. Their total amount for a single worker should not exceed the salaries for 5 months a year.

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LABOR

SELECTED ARTICLES ON AGRICULTURAL LABOR

Use Labor Resources Rationally

Kishinev SEL'SKOYE KHOZYAYSTVO MOLDAVII in Russian No 10, Oct 82 pp 16-19

[Article by I. Iorgov, deputy chairman of the Moldavian SSR State Committee of Labor: "Use Labor Resources Rationally"]

[Text] For a long time Moldavia has been considered, and rightly so, a region of the country with a relative labor surplus. The reasons for this were not just the high population density, but also the fact that a significant part of the family lived in rural areas. Indeed, thanks to the favorable demographic situation, up until the second half of the 1970's the republic had no particular difficulties providing labor for the economy. Therefore, primary attention was devoted to broadening the sphere of application of labor, creating additional jobs, and securing growth in employment of the able-bodied population.

It was just a few years ago, with the intensification of agriculture, that a shortage of labor resources began to be felt. This occurred at certain times, during the harvest of late agricultural crops, when incorporating the projected capacities of certain new enterprises, and in various other situations.

Nonetheless, we increasingly hear complaints about a shortage of workers and discussions not only of using labor resources more efficiently, but also about attracting persons engaged primarily in housework and private subsidiary operations, as well as pensioners who have partially lost their work capability, in public production. At the same time everyone understands that what we need is concrete action, not general talk, because preliminary demographic forecasts for the next 20 years promise a further aggravation of the labor resource problem. Already in the current five-year plan the economy's additional need for workers as envisioned by the plan can only be 24 percent satisfied, and the influx of labor resources expected in the next 10 years is less than one-quarter of the influx in the last 10 years. Therefore, insuring highly productive labor, raising the level of labor organization and use of labor, and implementing scientific-technical progress are becoming exceptionally important for the general economic and social development of the republic. It is perfectly obvious that in the future we will have to work under conditions of not only strict limits on growth in the number of personnel but also a reduction in the current absolute number of workers at existing enterprises and use of freed workers to staff newly

introduced facilities. Therefore, finding unused labor resources and putting them into operation is becoming a paramount job for production organizers in all elements of the republic economy.

The principal sources of reserves lie in reducing the use of manual labor in all sectors of the economy, on the one hand, and insuring full employment of workers in sectors that have seasonal production, on the other. Manual labor, unfortunately, accounts for a quite significant proportion of all labor. We are making great efforts to make human labor not only more productive, but also more meaningful, interesting, creative, and attractive. The elimination of manual, unskilled, and heavy physical labor is expected to play a key part in resolving this problem. At the 26th CPSU Congress Comrade Leonid Il'ich Brezhnev called this not only an economic, but also a major social problem. "Solving it," he pointed out, "means eliminating the major obstacles to making labor a vital human necessity."

Labor reserves are particularly large in the sectors that have seasonal production (that is, in agriculture and the sectors that process agricultural raw materials). Although up to 40-50 percent of the fixed productive capital of the processing industry has been replaced in the last two or three five-year plans, this has not brought about a notable improvement in the use of production capacities and calendar working time.

The analysis made each year by the Moldavian SSR State Committee for Labor provides evidence that the processes being implemented in the agrarian sector of the republic economy on the basis of interfarm cooperation and agroindustrial integration are creating favorable conditions for raising the level of employment of agricultural workers. During the last five-year plan a trend was observed each year toward decrease in the number of sovkhoz workers and kolkhoz members who were unemployed in the off-season (November-April). The number of persons not employed in public production during this period in 1980 was 32.9 percent less than in 1976.

Almost three-quarters of these losses of work time are accounted for by unemployment during the off-season. But significant losses of working time do not occur only during the off-season; they also occur in the most intensive period. A large part of the rural work force is employed on private subsidiary plots between August and October. It is paradoxical that during this time of intensive harvesting of agricultural crops we find it necessary to enlist workers, employees, and students for the harvest. The participation of elderly persons and pensioners who formerly worked conscientiously in animal husbandry and crop farming is declining. They are still needed and they could work, but it is bad for them to be out in the open air, subjected to the sun, wind, humidity, and the like. But they would be able to work in enclosed areas. And if so we would quickly find out that enormous labor reserves are not being used efficiently. But these reserves cannot be transferred to the industrial centers because, in the first place, they are not as mobile as young people and, in the second place, they are objectively needed in the countryside. During times of intensive work, of course, there are not enough of them. That is why the state is forced to enlist significant labor resources from the city to gather the harvest.

Yes, we must look for reserves. The key roles here belong to agricultural science and the agrarian ministries and departments that are directly involved in organizing agricultural production and labor. On the other hand, it is perfectly obvious that the production cycle in crop farming cannot be spread out and evenly distributed over all 12 months. Therefore, an off-season is unavoidable. An important way to raise labor efficiency in agriculture which has already been tested for many years in our country and the fraternal socialist nations is the development of production cooperation by industrial sites and enterprises with kolkhozes and sovkhoses to set up facilities, shops, and sections in the countryside for joint manufacture of consumer goods, assembly components, assemblies, apparatus, packaging, and other articles during the off-season. This experience shows that development of mutually advantageous production cooperation by kolkhozes and sovkhoses with industrial enterprises makes it possible not only to increase the employment of agricultural workers during time off from field work, but also to attract the other rural population not employed in public production (including pensioners) to socially useful labor, raise the employment of women, and keep young people in the countryside.

The kolkhozes and sovkhoses assign, build, or adapt buildings for the shops, lease or buy the necessary equipment, tools, and raw material from the industrial enterprise, organize the production process, and provide the labor. The enterprises deliver raw and processed materials, install and set up equipment and machinery, provide engineering-technical service, train rural workers for the shop being organized, give orders for the manufacture of articles, and accept and pay for them.

Industrial production is organized so that all workers (except those whose health does not permit it) work in the field during the intensive periods of agricultural work and work the rest of the time in the shops, while remaining kolkhoz members or sovkhos workers.

The development of this kind of production cooperation enables the industrial enterprise to greatly broaden production of finished output without increasing the number of production personnel or expanding production area and to save considerable money on nonproduction construction. In their turn, the kolkhozes and sovkhoses create conditions for themselves to strengthen their economies and increase deductions from profit for production, cultural-domestic, and housing construction in the rural areas. Experience shows that pendulum-like migration of workers from the countryside to the cities decreases sharply, indicators of worker permanence by age and qualifications composition improve, and labor discipline is strengthened. Most farms have stopped enlisting people from the industrial centers for agricultural jobs, gradually replacing them with workers from the industrial shops and facilities built at the sovkhoses and kolkhozes.

The kolkhozes and sovkhoses of Lvov and Transcarpathian Oblasts of the Ukraine, for example, are operating 66 shops and sections on the basis of production cooperation. Their annual volume of production of output is 28 million rubles. During the 10th Five-Year Plan the balance profit of kolkhozes in Lvov Oblast which have such shops was 9.5 million rubles, which included 4.3 million rubles (or 40 percent) from the sale of industrial output.

In Leningrad Oblast 95 sovkhoses, together with industrial enterprises, produce output worth more than 150 million rubles annually and receive more than 50 million rubles of profit. These shops employ from 3,000 to 12,000 people depending on the season. The shop at the Petrodvortsovyy Sovkhoz in Lomonosovskiy Rayon, which has been cooperating with LOMO [Leningrad Experimental Machine Association] since 1969, produces 150 types of parts. Since the shop has been in operation the outflow of young people from the countryside has practically stopped. The sovkhos receives one-third of its profit with the help of the industrial shop. Other similar examples could be given.

It is very important for our republic to begin right now working on the problem of developing production cooperation between industry and the kolkhozes and sovkhoses, setting up industrial production in the countryside, and on this basis solving the main social problem: keeping labor resources in the countryside and raising the efficiency of their labor. After all, the volume of production of agricultural output will increase sharply with the policy of intensification of agriculture, the attainment of productive age by large industrial interfarm orchards and vineyards, the development of tobacco farming, and creation of a large zone of irrigation farming in the southern part of the republic. Therefore, the need for labor will also grow, especially during the harvest season.

While acknowledging in principle the inevitability that labor resources will be released from agriculture as scientific technical progress is implemented, we must insure rigorous, planned regulation of this process and avoid any disproportion between the absolute decrease in number of persons employed in agriculture and the level of technical equipment available. Violations of this correspondence threaten serious consequences. The bitter experience of certain regions of Belorussia, the Baltic republics, the Nonchernozem Zone, and various other oblasts of the RSFSR and Kazakhstan is instructive in this respect. Many people there now believe that if vigorous steps had been taken 15-20 years ago to solve the problem of raising year-round employment of the agricultural population and social development of the countryside, they would not be experiencing the critical shortage of labor that today is noticeably retarding agricultural development.

We cannot help being concerned at the fact that the structure of the rural population is being seriously undermined by accelerated migration to the cities. In the period between the two censuses (1969-1979) the growth rate of population in the age bracket older than the able-bodied population increased 7.9 times as fast as the able-bodied population (in the cities this ratio was 1.12:1.0).

There have been attempts in the republic, of course, to set up industrial facilities, branches, and shops in small cities, communities, and rural populated points. There are more than 50 of them today. But they do not belong to the kolkhozes and sovkhoses; they belong to the industrial enterprises. The countryside has no interest in facilities, branches, and shops of this type because they draw workers away from agriculture, disrupt organization, and weaken labor discipline at the kolkhozes and sovkhoses while contributing nothing. Most of them are housed in dilapidated, unmodified structures, frequently damaged, and they have unproductive, obsolete equipment. Manual labor predominates at

them and working conditions are unsatisfactory. Practically no housing, pre-school institutions for children, and other sociocultural institutions are built for the employees of these facilities. Thus, these sites really do not bring technical, cultural, or social progress to the countryside at all. These goals can and will be fostered by production cooperation between industry and agriculture.

Unfortunately, valuable experience in industrial cooperation with kolkhozes and sovkhozes is not finding initiators or followers in our republic at the present time. The time has plainly come when the republic Gosplan and the ministries and departments must work out and implement concrete measures to develop cooperation between industrial and agricultural enterprises and set up kolkhoz and sovkhoz industrial sites. Of course, these planned measures must be a part of the state plan for development of the agroindustrial complex of the republic and appropriate material and financial resources for them must be assigned.

Insuring this kind of comprehensive approach through broad development of cooperation between industry and agriculture will create the necessary prerequisites for faster social development of the countryside, raising the efficiency of use of labor resources, increasing the volume of production of industrial and agricultural output (above all consumer goods), and successfully putting the Food Program worked out by the May 1982 Plenum of the CPSU Central Committee in conformity with the decisions of the 26th CPSU Congress into effect.

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Labor Resource Situation in Volga Region

Saratove STEPNYYE PROSTORY in Russian No 9, Sep 82 pp 12-14

[Article by M. N. Bogdarin, sector head of the Volga branch of VNIETUSKh and candidate of economic sciences, and L. A. Zharikova, graduate student at VNIETUSKh: "The Current Situation with Need for Labor in the Volga Region"]

[Text] There are many factors that explain the disproportion which has come about between rural labor resources and the labor needs of the kolkhozes and sovkhozes. Among them are the following:

- decrease in the size of the rural population;
- decrease in absolute scale of its reproduction;
- increase in the number of skilled jobs;
- violations of proportions in the training, distribution, and formation of cadres;
- shortcomings in socioeconomic support services to agricultural workers, and other factors.

In part this situation has also come about because of contradictions between the development in time of the material base of the kolkhozes and sovkhozes and labor potential in the countryside. To some degree a disproportion is observed between growth in the industrialization of production and the constant outflow of rural labor resources to the cities and industrial centers. The continuing rise in the general educational and cultural level of the rural population intensified its socioeconomic mobility. Excessive migration led to numerous negative consequences. For example, the increased outflow of young people upset the age-sex structure of the rural population.

Analysis of change in population size by oblasts and autonomous republics of the Volga region in the last 10 years (1971-1981) shows that it is continuing to decline. The largest part of the decline is occurring in the northwestern oblasts and autonomous republics. Rural population from the southeastern oblasts and republics has migrated to a lesser degree. At the same time there has been a decrease, although smaller, in the size of the able-bodied population. The scheduled labor force of Saratov Oblast, for example, is varying only a little.

There have been definite changes in the age structure of the able-bodied population of the zone during the period under analysis.

A certain increase in the proportion of the population in the non-able-bodied age bracket has occurred.

It follows from this analysis that the able-bodied part of the rural population has increased and grown younger.

Mechanical movement of rural population shows certain fluctuations. Natural growth for the zone has risen slightly calculated per 1,000 rural population. It was especially high in the Kalmyk ASSR: 31.1 percent absolutely and 28.5 percent per 1,000 inhabitants; in Astrakhan Oblast the increase was 13.3 percent, and in Volgograd Oblast it was 10 percent.

It follows from this that in the future more attention must be devoted to indoctrination and vocational training of rural young people.

The work force available and needed for agricultural production at kolkhozes and sovkhozes of the oblast was determined on the basis of the methodology developed by VASKhNIL [All-Union Academy of Agricultural Sciences imeni Lenin] and VNIIESKh [All-Union Scientific Research Institute of Agricultural Economics]. The need for labor was calculated by relating actual expenditures of worker labor for the year to the average annual available working time of one worker (possible number of working days in the year). The annual working time available was calculated by subtracting from calendar days the number of non-working days:

- days off and holidays (60 days);
- an average of 18 non-working days because of illness and maternity leave;

- 4 non-working days for performance of state and public duty;
- 18 working days of labor vacation.

Thus, the actual available working time of a kolkhoz member or kolkhoz worker in a year is 265 days.

The extent to which kolkhozes and sovkhoses of the oblasts and republics in the zone were provided with labor was also determined by this methodology. The need for labor in the peak period was defined as the product of the average annual need multiplied by a factor for seasonal fluctuations in labor expenditures.

It is very important to trace the changes that are occurring in order to analyze the processes of formation of the work force. Thus, with the exception of the kolkhozes in Astrakhan Oblast (five percent growth), the available work force at kolkhozes of the zone during the five years under analysis taking into account additional sources has declined. The figure has risen 2-29 percent at sovkhoses of the zone. The average figure for all Volga sovkhoses is 11 percent.

The need for labor during the peak period rose three percent at kolkhozes in the Kalmyk ASSR and seven percent in Astrakahn Oblast.

At sovkhoses the need for labor during the peak period rose three percent; broken down by oblasts and republics the figure was 3-25 percent.

The level of provision of labor (ratio of available labor to need) in the peak period is 100 percent at kolkhozes in Volgograd Oblast and the Bashkir and Kalmyk ASSR's, while it ranges from 88 to 96 percent in the other administrative units. The figure is lower at sovkhoses of the zone, averaging 80 percent.

The analysis shows that the only way to raise labor productivity is comprehensive intensification of production by switching it to industrial technology.

Additional analysis using the example of Volgograd, Kuybyshev, and Saratov oblasts showed the following: available tractor and machine operators at kolkhozes and sovkhoses increased two percent while the need rose nine percent, so provision with labor was 91-96 percent. The number of milkmaids, herdsmen, and calfmaids declined by 8-15 percent, while provision with this kind of labor fluctuates from 87 to 90 percent. The number of workers caring for hogs, flocks, and poultry increased 15-50 percent, and the number of drivers rose 3-13 percent, but there is still a shortage of them. There is also a shortage of electricians.

A decline is occurring in both the number of and need for workers engaged in horse-powered and manual labor. It can be predicted today that the number of workers in such occupations as tractor-machine operator, driver, and electrician will grow in both the near and more remote future, while under the influence of the processes of specialization, concentration, and mechanization

of production the number of workers taking care of milk cows, cattle, calves, hogs, and sheep and workers engaged in horse-powered and manual labor will decline while their qualifications rise.

The structure of the work force by occupational groups, using the example of farms in Saratov Oblast in 1980, shows that the proportion of rated specialists is already inadequate, just 22 percent. In the structure of personnel tractor-machine operators constitute 14.7 percent, while 66 percent of them are rated specialists. This level must be raised because at leading farms of the oblast (for example the Kolkhoz imeni Komintern in Krasnokutskiy Rayon) this figure reaches 95 percent.

The level of rated specialists is low among operators of sprinkling machinery and pumping station machine operators (15 percent) and in animal husbandry (25.3 percent). At kolkhozes and sovkhozes of the oblast animal husbandry workers are the largest category. They make up 30.4 percent of the structure of the work force, but as we see only one-quarter of them are rated specialists. This means that three-quarters of the animal husbandry workers are inadequately qualified, which is definitely reflected in the results of their labor. The categories of engineering-technical personnel, employees, and junior service personnel constitute 12.1 percent, which means that one out of eight workers belongs to these categories. Therefore there are definite labor reserves.

In the oblast 23 percent of kolkhoz and sovkhoz workers engage in horse-powered or manual labor. The level of manual labor reaches 50 percent and more in certain production processes. Therefore, agricultural agencies face major tasks to lower this intolerable level.

According to calculations made at the Volga branch of VNIETUSKh [expansion unknown], in the years until 1985 the oblast will have to have a reserve of tractor-machine operators (not including drivers), which will make it necessary to train at least 13,200 new workers each year (in addition to raising qualifications). Their proportion in the number of average annual workers at kolkhozes and sovkhozes should be 27 percent (see table below).

From the figures given we can see that by 1985 the proportion of rated specialists should rise to 19 percent as the result of raising qualifications. The number of average annual machine operators in the peak period should rise, accordingly, 25 percent. Therefore, it is necessary to train 13,200 tractor-machine operators each year considering 10 percent annual attrition.

A monographic study of all the above-enumerated aspects of the dynamics of the work force at the Kolkhoz imeni Komintern in Krasnokutskiy Rayon and the Krivoyarskiy Sovkhoz in Rovenskiy Rayon of Saratov Oblast showed that neither of them is fully provided with labor; the former will have 81 percent of its need during the peak period, while the latter will have 78 percent. In the peak period the sovkhoz is 201 persons short, and the kolkhoz is 143 short. The sovkhoz makes up only 30 percent of this shortage, while by enlisting additional personnel the kolkhoz completely covers the need. The problems of training machine operators have been resolved differently. During the 10th Five-Year Plan the number of tractors available at the sovkhoz increased by

eight percent while the number of tractor operators rose just one percent; the corresponding figures at the kolkhoz were 22 and 48 percent.

Table. Need of Kolkhozes and Sovkhozes of Saratov Oblast for Machine Operators Until 1985

	Average Annual Number of Available Machine Operators on 1 January 1981 — 40,900	Maximum Number for Peak Periods
Actual proportion of rated machine operators (classes I and II), percentage	66	66
Actual number of machine operators available per 1,000 hectares of land worked	6	8
Normative need for machine operators per 1,000 hectares of land worked	10.4	12.0
Area of tilling in 1985, hectares	6,358,700	6,358,700
Needed proportion of machine operators in number of average annual workers, percentage	23	27
Needed proportion of rated machine operators, percentage	85	85
Scope of training		
Total for 1981-1985, persons	58,310	65,500
In a year figuring 10 percent annual attrition, persons	11,600	13,200

The number of tractor-machine operators in the structure of labor also differs: 15 percent at the sovkhoz and 18.5 percent at the kolkhoz. In them the proportion of rated specialists is 83 percent at the sovkhoz and 93.8 percent at the kolkhoz. Among drivers the corresponding figures are 74 and 100 percent. Differences in the structure of animal husbandry workers are especially significant. At the sovkhoz they account for 28 percent, while at the kolkhoz they are 15 percent. At the sovkhoz 25 percent of them are rated specialists, while at the kolkhoz the figure is 57.6 percent. The reason for this is that during 1975-1980 the Kolkhoz imeni Komintern rebuilt its livestock farms and animal husbandry building and introduced progressive technology, full mechanization, and a shop-conveyor production system; no such changes took place at the sovkhoz.

The number of engineering-technical personnel at the kolkhoz has dropped sharply. They account for 2.1 percent of the labor structure as compared to seven percent at the sovkhoz.

The situation is similar with personnel who handle both dairy and beef cattle. But it must be observed that the number of workers engaged in horse-powered and manual labor has remained relatively stable: 18.1 percent at the kolkhoz and 19.0 percent at the sovkhoz.

This analysis enables us to conclude that the kolkhozes and sovkhozes of the zone have substantial internal reserves for improving the availability of work force, raising qualifications, and streamlining management of the economic mechanism.

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Two-Shift Schedule Working Well in Urals

Moscow SEL'SKOYE KHOZYAYSTVO ROSSII in Russian No 11, Nov 82 pp 15-18

[Interview with Vladimir Danilovich Saklakov, rector for scientific work at the Chelyabinsk Institute of Mechanization and Electrification of Agriculture by Ye. Simonova; date, place, and occasion not specified]

[Text] Scientists and specialists are giving a great deal of attention to the research and practical work being done by scientists at the Chelyabinsk Institute of Mechanization and Electrification of Agriculture under the direction of Vladimir Danilovich Saklakov, rector in charge of scientific work at the institute. People come there from everywhere to receive qualified advice on what is perhaps the main problem today: how to improve the use of machinery and tractors and raise labor productivity.

Today we continue our discussion of the scientists' research and practical introduction of their method.

[Question] In issue No 8 of the journal we raised the question of the experimental program at the Mir Sovkhoz near Moscow to use machinery efficiently and keep machine operators on the job. During the process of preparing the article it became clear that not everyone on whom the fate of the experiment depends has a proper attitude toward it. This naturally slows down dissemination and refinement of the Shatura experiment.

Everyone knows that the question of keeping workers in the countryside is not a simple one and there is no one clear answer to it. For example, we cannot simply hope that for some reason or other the influx of workers from the city will grow, because industry is growing steadily and also needs workers. And an improvement in the living conditions of the rural population cannot be a panacea; this is only one facet of natural development and progress. Therefore, when you hear farm managers exclaiming the seemingly all-absolving excuse: "But where can we get the people?!" One cannot help opposing such a statement of the matter. And doesn't this violate logic? On the one hand, we complain of a shortage of labor, while on the other hand we speak of industrialization of the sector, which means expanding the role of machinery in the production process which reduces the number of workers.

[Answer] Unfortunately, at the present time we can talk mainly about quantitative growth in machinery, but not qualitative. The managers of the Shatura Mir Sovkhoz adopted a correct path in developing their system by figuring that when the number of tractors increased, the return from them should also increase. And they achieved what they planned. But the thing is that no experience can be put to use, as they say, in a "carbon copy." The labor shortage is just one of the reasons (and not the main one) for reviewing the basic, fundamental principles of organization of mechanized work. There was a time when an entire kolkhoz would have just a single tractor which would be cared for and pampered; but at the same time they would squeeze everything they could out of it. But today we need other measures of the use of machinery. Why are some farms short of workers? It is because they still plan the need for machine operators in the old way: if you have 100 tractors, you need 100 tractor operators. But what can an operator and his assigned row tractor do during the spring, during plowing? Each year the manager worries himself over this and sends the tractor operator off on various kinds of jobs "simply to keep him busy." But at the same time the main jobs are going slowly and scientific farming practices are being violated.

In just the last 10 years the power-worker ratio at farms in our oblast has doubled. It is 40 horsepower today, and we now have about 190 horsepower in power plants per 100 hectares of arable land. Therefore, the problem is to make the most efficient use of available means. This requires, above all, precise and correct planning, which includes planning the need for human resources.

The starting point here should not be the number of machines; it should be the amount of mechanized work and the workload for each type of machine. Here is a simple example. There are 100 hectares of arable land per machine operator in Chelyabinsk Oblast. If we take into account the typical structure of planted fields, the technology of crop raising, and the productivity of the machinery, it will turn out that a machine operator is capable of doing all the jobs in a matter of days. But to do this each one must have, at a minimum, a plowing tractor, a row tractor, a grain-harvesting combine, a silage-harvesting combine, and the entire set of agriculture implements.

[Question] This is what they call the ideal variation. But it is not possible yet to equip each machine operator that way. So we see that the statement of the question itself is mistaken. We are not short of people at all; we are short of machines.

[Answer] Absolutely correct. The technical equipment available at kolkhozes and sovkhozes today is 55-65 percent of the necessary level. The challenge of providing farms with adequate machinery cannot be met either within the year or before the end of the five-year plan. This means that we must raise the efficiency of use of available machinery and the labor productivity of the machine operators.

[Question] Scientific research and the experience of leading farms show that there are reserves for this.

[Answer] Organizational reserves are most interesting today, because such operations as planting, interrow tillage, harvesting, and primary soil tillage take 2.5-3 times as long as optimal. As a result 25-30 percent of output is not harvested and, of course, its quality diminishes.

[Question] People are used to blaming these serious problems on the same old labor shortage and the evil forces of nature which "intervene" in the production process. But often it is just the opposite; by being late with the harvest, for example, we risk getting into trouble with nature.

[Answer] This can be seen graphically with the example of our climatic zone where the summer is short and often brings bad weather. A very difficult situation takes place in the fall; the time comes to harvest both silage and grain crops and to do the fall plowing. The farms are in a hurry to do all three jobs and then, of course, they do not have enough people or machines. But if they organize their forces wisely it turns out that the resources are adequate to manage everything on time. This conclusion is suggested by the seasonality of work during the summer and fall.

How can grain crops be harvested quickly and without losses? The first thing necessary is to complete the silage harvest as quickly as possible. This is the first cycle, when the entire "striking force" is directed to precisely this operation. Free machine operators begin the fall plowing. The second cycle is harvesting grain crops, and during this fall plowing continues on land that is freed. The main work of the third cycle, fall plowing, develops after completion of the harvest and all machine operators are brought in.

The essential point of the cyclical method is successive performance of jobs concentrating all material and labor resources primarily on the one job that is most important at the particular moment.

In 1977 when we tested the effectiveness of this method I managed a harvest-transportation complex at the Petropavlovskiy Sovkhoz. I wanted to work out certain elements in practice myself and see the advantages and weak points of the new organization of jobs. We finished mowing the grain crops in 12 days and finished the threshing in 20 days. As a result grain losses were reduced almost to zero and we harvested 29.7 quintals of high-grade grain per hectare. This was the best yield in the oblast that season.

[Question] What will happen in the case where a combine operator has finished the harvest but cannot go to work on fall plowing because there is no tractor for him?

[Answer] The cyclical method envisions three alternatives for distribution of machinery. The first contemplates single-shift machine work. It is applicable at those farms which have a large volume of work per machine operator and are able to assign him several power machines of different production types with appropriate implements. This makes it possible to use the machine operator's labor with maximum effect throughout the year. The Kashtakskiy Sovkhoz in Chelyabinsk Oblast, the Bol'shevik Sovkhoz in Kurgan Oblast, and many farms in Northern Kazakhstan use this variation. In this case one machine operator handles all jobs on an area of 400-500 hectares of arable land.

Unfortunately, few farms today have so much power equipment. The second alternative, which contemplates two-shift work, is suitable for the Urals, Siberia, the Volga region and various other parts of the country. It is suitable for kolkhozes and sovkhozes which have 60-120 hectares of arable land per machine operator and 140-170 hectares per conventional standard tractor. In this case the tractors are not assigned to one person, but to a group (team). The tractors and combines work in two shifts with the necessary number of machine operators enlisted to run them.

In this variation of assigning machinery, the problem you proposed is solved easily. When the combine operator completes the harvest he moves over to a tractor and does the fall plowing by shifts together with the other team member.

We give the third alternative the tentative name of mixed because it employs both two-shift and one-shift work. It is wise to use this alternative at farms where technical equipment available for the specific jobs varies. For example, the load on plowing tractors may be low while there is a large load on row tractors. Therefore, plowing can be done at optimal times by one-shift work, but row work must be organized in two shifts.

[Question] I would like to take a concrete example to consider the organization of two-shift work as the most typical variation used today.

[Answer] It was first used successfully at the Donguzlovskiy Sovkhoz. Incidentally, the success was largely determined by the lively interest and active posture of the farm director and specialists who in a short time not only themselves tried to thoroughly study essential points of the new type of labor organization, but also to prepare the collective of machine operators for the reorganization.

The sovkhoz has 6,907 hectares of arable land. In the structure of planted fields spring grain crops occupy 4,600 hectares, silage crops account for 440 hectares, and annual and perennial grasses are 1,070 hectares. The fleet of machines includes 68 tractors (2K-700's, one T-150K, six T-100's, 20 DT-75's, six T-74's, 22 MTZ-50's, nine T-40's, and two T-25's) and 25 grain-harvesting combines. Twenty-seven tractors are permanently engaged in animal husbandry, construction, and other work. Accordingly, 27 of the 96 regularly employed machine operators work on them.

The farm is able to allocate 38-41 tractors, 25 combines, and not more than 50-55 machine operators for jobs in crop farming. Until 1976 the fleet of tractors and machines was used in one shift and the explanation was a shortage of people, which continues to be the story at many other farms to the present time. This situation was the main cause of failure to do field jobs on time. The collective had a particularly hard time during preparation of feed, harvesting grain crops, and fall plowing. The harvest of silage crops coincided with the grain harvest and lasted 25-30 days and more. Naturally, it is simply impossible to insure the required quality of work and output. The length of the working day for machine operators during the summer was 10-12 hours and often no days off were given. Machine operators driving wheeled tractors earned an average of 180 rubles a month, while operators of caterpillar tractors earned 140. Therefore, the most qualified tractor operators try to get assigned row tractors, while

the caterpillar tractors were put in the hands of less qualified and experienced people.

After studying the situation at the sovkhos we decided to switch the machine and tractor fleet to a two-shift work schedule. The essential feature of the change was a redistribution of the machinery. Nine pairs of machine operators were assigned two tractors (DT-75 and MTZ) and one grain-harvesting combine apiece. Fourteen pairs received one tractor (a K-700, T-100, or DT-75) and a combine. Two machine operators were put to work on DT-75 and MTZ tractors and two others on an MTZ tractor and a grain-harvesting combine. Four MTZ tractors used in crop farming and all of them employed in animal husbandry and administrative jobs were assigned one by one to machine operators. The agricultural machines were also distributed in this way.

This kind of assignment was based on a scheduled plan for machinery use worked out by the chief specialists of the sovkhos. The plan envisioned two-shift work by machinery in the spring, during tillage of row crops, for laying in hay and haylage, and in fall plowing. In 1976 the harvest of silage crops was conducted in one shift. By increasing the workload per combine to 60 hectares machine operators completed the job in seven days. But in the next year, after switching to two-shift work, silage crops were harvested from 434 hectares in five days.

The grain harvest time was also cut sharply, to 20 days. And fall plowing was completed by 21 September. Moreover, it was begun parallel with the harvest in one shift by two K-700 tractors, three T-100's, and two DT-75's. After the harvest was completed all the plowing tractors worked in two shifts.

[Question] In other words, use of the cyclical method made it possible to keep to the job schedules dictated by scientific farming practices?

[Answer] This is one of the advantages which the Donguzlovskiy Sovkhoz workers achieved by introducing the cyclical method, and they were followed by many other farms of the oblast. Furthermore, the working day of the machine operator was normalized. The shift does not ordinarily exceed eight hours in length. And despite the shortening of the working day, the annual work output per machine operator increased from 840 hypothetical standard hectares to 1,300.

[Question] The newspaper CHELYABINSKIY RABOCHIY recently published a report that the Uralets Sovkhoz has formed a mechanized complex for round-the-clock harvesting of silage crops. What is this, a refinement of the cyclical method or, by contrast, a sign of unsatisfactory organization and machine operator labor? In your opinion, what should people's labor schedule be when the machinery is used on two shifts?

[Answer] The Uralets Sovkhoz is the first to form such a complex. It is good that they were able to organize the work of their combines and machines in two shifts. As for the schedule of labor and rest for machine operators, we are firmly convinced that people need to sleep at night. You must remember that the second shift does not produce a proportional increase in machine productivity compared to one-shift work. For tractors it is 1.6-1.7 times, while

for grain-harvesting combines it is just 1.25-1.35 times. Losses increase sharply during the night and morning hours in grain harvesting, for example. The shortage of highly skilled workers must also be taken into account.

Based on this we recommend enlisting assistants to combine operators or assigning an experienced team leader-instructor for a group of, say, three machine operators. In both cases their functions will be to substitute for the combine operator and help with mechanical maintenance, adjustment of the machinery, and fixing up troubles. At the same time the helpers will receive good vocational training and the instructors will teach their subordinates.

Based on the experience of many farms such as Donguzlovskiy and Izmaylovskiy which have been using the cyclical method with two-shift work successfully for many years now, this labor schedule for machine operators is most suitable. The first shift begins at 0500 in the morning. The people have breakfast from 0800 to 0900, and then work until 1300. One hour is given for the shift change, the noon meal, and technical servicing of the machinery. The second-shift machine operator works until 2200 with a break from 1800 to 1900 for the evening meal. On the next day he comes for the first shift, then rests for a day, and goes to work on the second shift.

[Question] It is no secret that any organizational restructuring demands a psychological restructuring. For a long time the machine operators at the Mir Sovkhoz did not accept that they would have to turn their tractor over to others, even if just for a time. Stepan Il'kovich Belobrovko, the best machine operator at the Donguzlovskiy Sovkhoz, told very clearly and convincingly how the labor of the grain growers changed:

"I have been working as a machine operator for many years and have had to do everything: plowing, planting, and hauling loads. Comparing our former working conditions with the present ones the only thing I can say is that the cyclical method is advantageous for us. Everyone knows that for the rural worker harvest time means spending every day in the field from dawn to dusk. Therefore when we began switching to the new method of using our machinery it seemed unusual to us during the intensive harvest time to have the slightest free time. I would work, say, until 1300 in the afternoon then turn the tractor over to the next shift and be free until the next afternoon. This gives us time to look after domestic livestock and take care of other matters. When guests come you can meet them as a proper host, not excuse yourself and ask them to get along without you because you have to go to the fields. Or I might take my Lada and go gathering mushrooms, or fishing. It is your own time, and you can do what you want.

"At first the machine operators took a guarded attitude toward the new organization of labor, but now they are used to it. After all, look how it turns out. We get more rest during the day than before, we do not work at night, and we manage the work quicker. The two-shift system helps us out."

[Question] Does the system of machine use you have posed necessitate raising the qualifications of machine operators?

[Answer] This is indeed an important matter. What is required of the machine operator under the cyclical method of work organization? The ability to operate various machines and a knowledge of the production process. This ability and this knowledge must be top-quality. After all, the times for performance of various operations are short, a matter of days or even hours. There must be about 70 machine operators for 100 tractors and combines.

[Question] Then as the level of technical equipment available at the farms rises, apparently, will fewer be required?

[Answer] At those farms which are able to organize work according to the first alternative, which is to say in one shift, 40-50 machine operator-technologists are enough for 100 tractors and combines. (There is a reduction in the number of employees for you, a sign of the industrialization with which we began our conversation.) The rest are the people who must keep the machinery in working condition — the set-up specialists and the field repair service. Their qualifications and technical training must be higher.

[Question] This is entirely natural, because the designs of the machinery are becoming more complex and their readiness and work reliability must be high.

[Answer] This is exactly why the machine yard service today has to do more than store and repair the machinery. It must also do additional assembly, modification, and technical adjustment.

This is one more feature of industrialization of the sector: the cyclical method is being introduced in the local areas chiefly by engineers although, despite all the importance of their duties of insuring normal machine operation, they are performing service functions. I think that the explanation here is not the passiveness of agricultural technologists, but rather the higher level of mechanization. The agricultural engineer today already has a better mastery of the situation in the plant growing shop than the agronomist does with respect to the engineer's sphere of activity.

[Question] Since we have begun talking about introduction, let me return to the Mir Sovkhoz and draw a parallel. Not a single farm in suburban Moscow has followed the Shatura example. Individual teams are being formed and many of them fall apart. This is natural because the Shatura "continuous system" is efficient only where used in an integrated way. But in Chelyabinsk Oblast the number of farms that have mastered the new method is growing quickly. It is sufficient to point out that plans envision introducing it at all farms in the current five-year plan.

[Answer] Anything can be spoiled by inertia, a subjective attitude, or simple laziness.

The cyclical method is in many ways universal. But even it cannot be used blindly, without understanding its essential features and making certain efforts. It requires adaptation to the particular farm. Consideration must be given to the specialization, availability of equipment, and actual personnel situation. It is essential for the chief specialists and management

"triangle" to understand the essence of the matter and change their attitude toward the traditional system of work organization and planning. The schedule of machine use must become the principal document. It shows what technical resources you have available and what human forces are needed to do the work very clearly. The machinery is distributed according to one of the three alternative plans based on this position. In practice this reorganization can be carried out by any farm.

Despite vigorous introduction of the method into practice by farms in our oblast, however, we do have a significant "but" which must be mentioned.

In the fall of 1978 the director of the Donguzlovskiy Sovkhoz complained that they were not finishing fall plowing on time. I was surprised. This was the sovkhos where the managers and machine operators themselves, on their own initiative, were the first to reorganize their work; I certainly did not expect a breakdown. It turned out that several combines and tractors had to be sent to another farm, to help out neighbors. This was at the time when according to the plan the work of the final cycle, fall plowing, was supposed to be going forward in full swing at Donguzlovskiy. So that year they failed to complete fall plowing at one of the divisions. We do not need an agronomist to explain the danger here. The fields that were plowed in the spring yielded 16 quintals per hectare instead of 21.

To help is good, of course. But perhaps we sometimes misunderstand it? Aren't we encouraging attitudes of dependency in those who do not try to borrow the know-how of the leaders and introduce progressive methods? Grain is the main thing. Everybody understands this, both the leaders and the followers. But the former live and work by this formula, while the latter use it to cover up their own lack of diligence. They reason that the harvest will not be lost, help will be sent.

[Question] You have told us about the cyclical method in some detail. But how efficient is it?

[Answer] Let us look again at the experience of the Donguzlovskiy Sovkhoz, because they have realized the potential of the method most fully.

In the first place, they have achieved optimal times for performing field jobs. In 1973 silage crops were planted in 12 days, but it now takes four and grain crops are now planted in nine days instead of 15. Hay and silage are prepared twice as fast and haylage is managed three times as fast. Before introduction of the method the grain harvest took half a month, now it takes 12 days. Finally, fall plowing uses 16 days as compared to 55.

The annual volume of mechanized work has increased from 69,000 standard hectares to 110,000. The daily productivity of combines has risen 30 percent,

Whereas it used to happen that at the start of the harvest, for example, the yield of silage crops was 376 quintals per hectare but by the end of the work it was just 173, the actual yield today does not diverge from the varietal yield.

[Question] The cyclical method is being introduced into practice quite quickly in Chelyabinsk Oblast. What has fostered this?

[Answer] Our institute has a strong and long-standing friendship with the oblast agricultural administration. It takes an interest in our work, and this is the result. When the method was tested in practice the administration formed a standing commission on introduction. Scientists and specialists were included in its membership. Each farm, in conformity with the oblast plan for introduction, went through this commission. The commission would familiarize itself with the schedule of machine use in detail, make its remarks, offer advice, and discuss the results of work done.

Today, when entire rayons, not just individual farms, are switching to the cyclical method the commission has organized seminars for each group of specialists: engineers, agronomists, economists, and farm managers. This kind of training has been carried on Nagaybaskiy, Bredinskiy, and Kizil'skiy rayons.

A great deal of traveling is necessary, of course. And people come to us, not just from Chelyabinsk. About 200 delegations from various oblasts, krays, and republics have visited the institute. Farms in Voronezh, Sverdlovsk, Kurgan, Tomsk, and other oblasts are switching to the new form of organization of mechanized work. A decision has been reached to set up a specialized laboratory at the oblast center for scientific organization of labor.

I would like to note that in the coming years the cyclical method of work will be introduced more broadly in brigades, teams, and other subdivisions because it is essential in the transition to paying machine operators based on the final result. This was clearly stated at the May 1982 Plenum of the CPSU Central Committee during discussion of the USSR Food Program.

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LABOR

STEPS TO INTRODUCE COLLECTIVE CONTRACT SYSTEM IN AGRICULTURE PROPOSED

Moscow EKONOMICHESKAYA GAZETA in Russian No 47, Nov 82 pp 11-14

[Article under the rubric "For Agricultural Managers and Specialists": "Recommendations on the Organization of Cost Accounting Mechanized Subdivisions with Job-Plus-Bonus Labor Payment and Periodic Advances in Crop Farming (The Collective Contract) — Cost Accounting Mechanized Subdivisions in Crop Farming"]

[Text] These recommendations were prepared by the All-Union Scientific Research Institute of Agricultural Economics and the All-Russian Scientific Research Institute of Economics, Labor, and Management in Agriculture with participation by specialists from the USSR Ministry of Agriculture. They were approved by the scientific-technical council of the USSR Ministry of Agriculture.

1. The Essential Features and Principles of the Collective Contract

The economic sense of the collective contract in agriculture is that a collective of workers, usually a team or brigade of machine operators, undertakes the obligation to receive a definite amount of output on its assigned land while the management of the sovkhoz (or kolkhoz) obligates itself at the same time to provide the collective with the necessary resources and to create conditions for successful performance of this task and, most importantly, to pay for the output produced under predetermined conditions and rate schedules.

This is a special, more refined form of internal cost accounting relations based on the mutual economic interest of the client (represented by the directors of the sovkhoz or kolkhoz) and the contractor (represented by the labor collective) in producing a greater quantity of output. The collective contract most fully considers the specific features of agricultural labor and necessitates the transition to those forms of material compensation whose only source for each member of the primary collective is the final result of combined activity.

The fundamental principles of the formation and activity of production subdivisions with collective contracts to raise (produce) output are the following:

- use of collective labor payment based on final results with distribution of collective earnings among workers depending on personal contribution to the overall result measured by time worked and other indicators;

- specialization of brigades and teams primarily in jobs directly related to raising (producing) output. Performance of work not related to production of output by members of subdivisions is permitted only to insure more even employment of workers in the course of the year;
- establishing a comparatively small size for brigades and teams to promote fuller use of the stimulating effect of collective payment for output and the indoctrination role of the primary labor collective while simultaneously permitting organization of labor with due regard for the principles of scientific organization of labor;
- providing contracting subdivisions with machinery and other resources calculated so that their workers can independently perform the bulk of the mechanized jobs in raising (producing) output;
- recruiting members of the labor collectives of brigades and teams on a voluntary basis and election of their managers;
- strengthening of cost accounting relations between brigade and team collectives and the enterprise management through contracts which determine the mutual obligations of the parties and establish economic penalties for failure to perform them;
- giving the collectives of brigades or teams independence to decide operational production questions and raising their accountability for production technology;
- giving brigade or team collectives the right to ruble control of the quantity and quality of labor by workers of other subdivisions enlisted to perform certain production operations.

2. Formation of Permanent Primary Production Subdivisions Using the Collective Contract

The job-plus-bonus system of labor payment with periodic advances can be used effectively only in permanent production collectives of enterprises.

In crop farming the permanent production subdivision is a collective of workers who perform a volume of work in production of one or several products on assigned land through their own efforts and are responsible for the final results of production.

The organizational form of the permanent production collective, its size, and its vocation-qualifications composition are determined based on the labor-intensity of the crops being raised, the technical means employed, and other

factors. There are several types of subdivisions depending on the concrete conditions: specialized, which engage in cultivation of one or two crops; comprehensive, which raise several agricultural crops within a field crop rotation; mechanized subdivisions, which specialize in raising feed crops on irrigated land and concurrently feed out young cattle and sheep, as well as others.

It is advisable to assign the mechanized cost accounting subdivision on a collective contract to a crop rotation with an appropriate assortment of agricultural crops; this promotes a more even workload on workers of the brigade or team on the given land and makes it possible for the collective to raise high yields with fewer personnel.

The organization of specialized subdivisions is justified in raising certain labor-intensive crops (cotton, sugar beets, tobacco, and vegetables) and in grape growing, orchard farming, feed production, and elsewhere.

It is essential to consider the following when organizing permanent production subdivisions on collective contracts:

2.1. Collective forms of labor organization and material incentive are most effective in numerically small collectives of workers who are fairly equal in qualifications and equally conscientious toward the work.

2.2. The size of production subdivisions on contract should insure a relatively even work load on members of the brigade or team in the course of the year (or season) and minimize enlistment of outside labor during intensive seasons. The brigade or team must do at least 70-80 percent of the volume of mechanized work on the assigned area with its own personnel. Moreover, at least 80 percent of the working time of the labor collectives on contract should be used for work in the subdivision.

2.3. The teams and brigades are normally staffed with machine operators. Where necessary manual workers are also included in these collectives. The number and composition of workers should correspond to the assigned production program. It is advisable to compose the personnel of the collective with due regard for the desire of machine operators to work together under contract conditions.

2.4. Permanent teams and brigades on contract who are raising agricultural crops may be combined with temporary labor formations. Temporary technological subdivisions (harvest, planting, and other technological teams and detachments) should be formed on the basis of permanent brigades and teams, where necessary including additional machinery and labor resources in them for the period of most intensive work or combining the harvest machinery of two or three teams into one harvest-transportation complex (detachment).

Temporary subdivisions should not make it impossible to identify the final results of the activity of the permanent collective.

2.5. The activity of a team or brigade is determined by its contract with the management of enterprises and the cost accounting assignment. The collectives of teams and brigades working under contract conditions are given the right to

decide fundamental questions related to the production activity of the collective independently (taking into account the weather conditions of the particular year). They monitor the performance and quality of work mutually, take steps to influence violators of discipline, and determine the amounts of temporary advances, pay supplements, and bonuses paid to each worker for the final results of work.

A council is formed in the brigade by decision of a general meeting of the collective. The brigade council is convoked when necessary to discuss and decide internal questions aimed at improving labor discipline, raising labor productivity, using machinery correctly, and other production and personal matters.

2.6. Cost accounting mechanized subdivisions on collective contracts in crop farming should insure rational organization of production processes with the smallest possible number of machine operators and relatively even employment of them during the period of field work.

The formation of production subdivisions begins by defining the set of jobs in conformity with concrete production conditions: the volume of agricultural land in the crop rotation, the labor-intensity of the crops being raised, and the existence of crops in the rotation whose work times do not coincide.

2.7. The need for machinery is calculated with due regard for the area of arable land and the agricultural crops assigned to the brigade or team.

Calendar schedules of work are compiled on the basis of technological cards. Then a composite schedule of field work is developed in the subdivision and on this basis the number of tractors, combines, and agricultural machines necessary to perform the entire volume of work for each period (planting, management, harvest, and the like) is calculated. The possibility of organizing double-shift work by field aggregates during intensive periods, chiefly through the internal reserves of the subdivision which include use of machine operators on the machinery used most actively during the given period, is taken into account here. A lengthening of the working day to perform certain agricultural jobs is also envisioned.

2.8. The number of members in the brigade or team is determined according to the schedule of machine use. The brigade or team includes that number of machine operators and other workers which can be employed in work on assigned fields in a relatively even and full manner. It is not wise to include workers who are needed to perform certain field jobs only during intensive periods in the membership of the subdivisions.

When members of brigades or teams do not have work in their own subdivisions they may be used in animal husbandry, construction, repair work, and elsewhere. When production demands it, the collectives of teams and brigades may, with mutual consent, help one another and combine to perform the most important jobs, for example by forming combined detachments in the harvest.

2.9. The concrete size of the brigade or team is determined with due regard for natural-economic conditions, the level of production specialization and concentration, and the technology and machinery employed.

For example, mechanized teams of 9-12 machine operators are most widespread at farms in Millerovskiy Rayon of Rostov Oblast where crop rotations and fields are large in size and grain crops account for more than 60 percent of the structure of arable land. The teams are assigned rotations with areas of 1,400-1,800 hectares and the set of necessary machinery.

Larger mechanized brigades have been transferred to contract in Bashtanskiy Rayon of Nikolayev Oblast. They consist of 15-18 and more people and are assigned rotations with areas of 2,500-3,000 hectares.

Under conditions of Siberia and Altay Kray teams consisting of 5-10 machine operators and brigades (without teams) consisting of at least 15 people are formed for work on contract.

In rayons engaged in raising labor-intensive crops (flax, cotton, sugar beets, and others) specialized brigades and teams are formed whose size is determined by the specific features of their cultivation.

For example, in the zone of cotton production the size of teams may range from 50 to 90 hectares depending on the configuration of the land, condition of the irrigation system, and workload per plowing tractor. In this case the workload of cotton planting should be 3-4 hectares per worker. One irrigation worker is assigned for each 15-20 hectares.

Teams consisting of three or four machine operators are used for raising fiber flax at sovkhozes and kolkhozes in Kalinin Oblast. The teams engaged in raising feed crops on irrigated land with concurrent feeding out of young cattle at farms in Saratov Oblast consist of 5-6 machine operators.

Workers who service the machinery, set-up supervisors, manual laborers, and others can be included in labor collectives. The questions of including such workers and the number of them are decided depending on their employment in the collective.

3. Planning the Production Activity of the Brigade or Team

To a significant degree the efficiency of work by mechanized cost accounting subdivisions on collective contracts depends on the soundness of the assignments given to them for production of output. The production assignment for brigades and teams consists of agrotechnical, economic-organizational, and other measures to insure fulfillment of the plan for production of output and ceilings on expenditures of labor and capital to produce it.

Strengthening cost accounting relations and giving subdivisions independence to decide production questions impose high requirements on the planning system.

When determining the yield and volume of production of output by crops, the quality of seed and the availability of fertilizers, herbicides, and other production resources are taken into account in addition to the quality of the land.

The planning of the annual production assignment should begin with compilation or refinement of the technological cards. They are developed (or refined if the collective has already been working for more than a year) with participation by the brigade or team collective under the direction of farm specialists. The technological cards envision the volume of agricultural work for each crop or group of crops. The wages fund, labor expenditures, need for tractors, combines, and agricultural machines and implements, and need for fuel and lubricants and repair and technical maintenance resources are determined on this basis.

The expenditure of fuel and lubricants is planned based on the volume of work for each brand of tractor and machine and established expenditure norms per unit of work. The cost is determined on the basis of state transfer [otpusknaya] prices.

Ceilings on seeds are established with due regard for planting rates, planted areas, and the cost of a quintal of seed. The expenditure of capital for fertilizer and toxic chemicals is established on the basis of planned funds. The cost is established by the purchase price taking into account delivery.

Expenditures for repair of tractors, combines, and agricultural machines and technical maintenance are calculated by the planned volume of work and deduction norms.

The wages fund for the production subdivision includes payment according to the rate schedule for the volume of mechanized and horse-powered or manual work, all types of supplementary payments (for class rating, incentive for timely and good-quality performance of crucial agricultural jobs, higher pay for gathering the harvest, and the supplement for output), and expenditures for wages to repair tractors, combines, and agricultural machines and implements and perform technical maintenance work planned to be done during the field period by personnel of the brigade or team. The volume of machine repair work which is to be done by personnel of the production subdivision during the field period is determined by the manager of the brigade or team together with the chief engineer of the sovkhoz or kolkhoz. The wages fund of the production subdivision includes the wages of its managers, mechanics, and refueling worker. All these taken together will be the general wages fund for the brigade or team.

4. The Organization of Primary Accounting and Analysis

4.1. Records of agricultural jobs done for the brigade or team and the extent of labor participation by each member of the collective are kept regularly by the manager of the production subdivision. Each month he makes out and signs an account of the working time of brigade or team numbers which serves as the basis for calculating the average monthly advance (earnings) of workers and kolkhoz members.

This document is the basis for current analysis of the use of working time of the subdivisions and monitoring the amount of the advance given.

It is wise to analyze and compare the amount of advance actually paid to brigade or team members in labor payment with the calculated expenditures for labor according to the volume of work actually done by the given subdivision on a regular basis during the year (especially in the first years of work in the new way).

Mechanized jobs done by team or brigade members in other production subdivisions and such work done in the sector of the team by outside workers are recorded by the Record Sheet for Tractor and Machine Operators (Without a Trailer Worker) (agricultural accounting form No 67b) while transportation work is recorded by the Tractor Log Sheet (Form No 68) with later entry in the brigade leader's log (Form No 65). Horse-powered and manual work done by outside workers is also recorded in the brigade leader's log. The manager of the particular contract collective certifies the volume and quality of work done by outside workers in the accounting and log sheets by signing them.

4.3. The refueling worker, mechanic, or brigade or team leader keeps track of actual expenditure of fuel and lubricants. A ceiling log is set up for each tractor and combine to keep better fuel and lubricant records. This is the basis for technical maintenance of the machinery. At the end of each month the mechanic, refueling worker, or brigade or team leader makes up a report on use of fuel and lubricants by the brigade or team. It is signed by the subdivision manager and ratified by the chief engineer (head of the mechanization shop) of the farm.

All of the above-mentioned documents are turned over to the bookkeeping department of the sovkhoz or kolkhoz and serve as the basis for corresponding entries in the bookkeeping registers.

4.4. Accounting for expenditures for production of output in mechanized subdivisions is organized in conformity with instructions on maintaining bookkeeping records at agricultural enterprises, which were ratified by the USSR Ministry of Agriculture on 26 September 1969, and according to letter of instruction No 21 of the USSR Ministry of Agriculture, dated 16 January 1973 and entitled "Procedure for Accounting for Production Expenditures at Agricultural Enterprises Employing Team Organization of Labor Using the Job-Plus-Bonus Work System with Periodic Advances."

The results of work by the production collective and results of analysis of the expenditure of money and material resources are regularly discussed at general meetings or sessions of the brigade council. After conclusion of the agricultural year, conversion of output to income, and summarization of the results of production-financial activity, a final accounting is made with workers of the brigade or team.

5. Labor Payment and Material Incentive

The basis of the collective contract is the job-plus-bonus system of labor payment dependent on the quantity and quality of output received. Workers (kolkhoz members) of brigades and teams are paid for output according to rate schedules after gathering the harvest and completion of the most important agricultural jobs for incomplete production. Until output is received the members of production subdivisions working on collective contracts are given advances calculated against later payment for output.

The conditions of wage and bonus payments should insure that all members of the collective have an interest in receiving the largest possible amount of high-quality output with minimum expenditures of labor, materials, and money.

Calculating the Job Rate for Output

5.1. Job rates are determined per quintal (unit) of output or per 100 rubles of value of output at actually realized prices based on the planned volume of production or output production norms and the wages fund. The quality of output (grade, standard, sugar content, and the like) must be taken into account in determining the job rate. It is wise to calculate the job rate for a quintal of output separately for standard and nonstandard output.

5.2. The payment for output fund includes the wage rate fund enlarged to calculate rate schedules for output of grain corn, rice, buckwheat, castor bean, seed, and roots of seed sugar beet; seed, straw, stock, and fiber of flax and hemp; and commodity and seed onions and garlic (by 50 percent), and other crops (25-50 percent depending on level of yield).

The rate fund is calculated by technological cards compiled for raising each crop on the basis of the planned volume of work, established output norms, rate schedules, and effective rates. The rate fund includes wages for incomplete production jobs. It is wise to distribute it only for those crops with which the performance of particular incomplete production jobs is involved.

The amount of wages of the brigade leader, set-up specialists, and other service workers are distributed proportional to the direct labor payment for all crops raised by the brigade or team. A pay supplement of up to 15 percent of the monthly advance is given to team leaders for management of the collective, while unreleased [neosvobozhdenyye] brigade leaders can receive up to 25 percent.

In addition, the supplementary payment for performing jobs with high quality and at optimal scientific farming times, increased pay for gathering the harvest, supplements for class ratings, and additional payment for the titles "Master of Crop Farming" and "Master of Irrigation" are included in calculating the rate for output.

Example. A subdivision is raising grain crops. It plants 1,800 hectares, gets a yield of 25 quintals per hectare, and harvests 45,000 quintals. The ceiling on expenditures for labor payment comprises the following: payment by rate schedule — 20,000 rubles; payment for output (25 percent of rate schedule) — 5,000 rubles; supplementary payment for timely and high-quality performance of jobs — 1,400 rubles; increased payment in gathering the harvest — 1,000 rubles; supplement for class rating and additional payments for title "Master of Crop Farming" — 3,000 rubles. The rate for one quintal of output according to the recommended conditions will be 67.5 kopecks: $(2,000 + 5,000 + 1,400 + 1,000 + 3,000 \text{ rubles} \div 45,000 \text{ quintals} = 67.5 \text{ kopecks/quintal})$.

5.3. It is permitted to establish stable rates for periods of up to five years for workers of brigades and teams working on contract. It is wise to set uniform rates for output in the brigade or team for machine operators and workers employed in horse-powered and manual jobs.

5.4. The norm for production of output for a brigade or team working on a collective contract is established on the basis of normative yield of agricultural

crops determined with due regard for technology and concrete production conditions beginning with the level of yield attained for the preceding five years.

5.5. Job rates for output may be differentiated (progressively larger) depending on the yield of the crop.

The rate fund of wages calculated by technological cards for normative yield of agricultural crops, amounts of supplementary labor payment for high-quality and timely performance of jobs, supplements for output, and bonuses for overfulfillment of assignments for production of output as envisioned by the Model Statute on Labor Payment are used to calculate differentiated job rates.

The development of yield scales begins with a determination of the minimum and maximum yield of agricultural crops. The minimum yield must be set at the yield level received by the farm on the average for the preceding five years, that is, at the level of the production norm.

The maximum yield of agricultural crops is established depending on the level of yield achieved in the preceding five years. At those farms where the average level of yield actually achieved in the last five years is lower than the average of the rayon for the same time the maximum yield and development of the scale should be set 35-40 percent higher than the average five-year figure. At farms which have in the most recent five years matched the level of yield of agricultural crops for the entire rayon during this time the maximum yield in the scale should exceed the average five-year level by at least 30-35 percent. But if the average five-year level of yield for the farm exceeds average rayon figures for the same time but does not reach the indicators of the best farms in the rayon or oblast and falls significantly short of indicators received at varietal testing plots, the maximum yield in the scale should be 25-30 percent above the average five-year figure.

At farms which receive high yields of agricultural crops year after year and where the indicators of yield achieved on the average for the preceding five years are close to the yield indicators received at varietal testing plots and by leading brigades and teams of the rayon or oblast, the maximum yield is set 10-15 percent above the average five-year figure, while the minimum yield is at least 90 percent of this level.

The number of gradations of yield in the scale depends on the ratio between the minimum and maximum figures and the size of the interval of change in yield. They should not be too large. For grain crops it is wise to establish the intervals of change in yield of the scale at 1.5-2 quintals per hectare, while for potatoes it should be 10-15, for feed root crops and silage corn — 10-20, for perennial grass hay — 3-5 quintals per hectare, and so on.

The initial job rate is determined based on minimum yield and the sum of wages constituting up to 150 percent of the planned rate fund envisioned by the technological card. In this case the sovkhos director determines the concrete amount of increase in the wage rate fund for each crop, with the exception of crops for which no firm increase has been established (see section 5.2 above).

For differentiation, increasing the job rate as yield increases from the minimum toward the maximum figure, the amounts of the supplementary payment for high-quality and timely performance of jobs envisioned by the Model Statute are used. The maximum payments here can be not more than one month's average earnings (1.5 months for row and feed crops) or 8.3 and 12.5 percent of the wage rate fund and bonuses for overfulfillment of the plan (exceeding the average level for the preceding 3-5 years) for production of output. In this case 1.7 percent of the total bonus amount (41.7 percent of annual earnings) is reserved to pay bonuses for savings on direct expenditures and capital for repair of machinery, while 40 percent is used to differentiate job rates.

The distribution of amounts of supplementary pay and bonuses for output among gradations of yield in the scale is accomplished in different ways because the supplementary payment may also be calculated for yield at the planned level and lower, while the bonus is only figured if the plan is overfulfilled or the average level of yield is exceeded.

Therefore, a maximum norm for payment of the pay supplement for work quality (that is, 8.3 percent of the wage rate fund, and 12.5 percent for row and feed crops) is established for the maximum yield envisioned in the scale; and for the minimum level of yield envisioned in the scale regardless of whether it corresponds to the planned level or the level actually achieved in preceding years, a limit of 40-50 percent of the maximum norm of the pay supplement is established, which is 3-4 percent of the wage rate fund (or 5-6 percent for row and feed crops).

To establish the norm (size) of the supplementary payment for each level of yield envisioned in the scale it is necessary to divide the difference between the maximum norm and the norm set for the minimum level by the number of yield gradations in the scale reduced by one. Then the fraction obtained is added to the norm established for the minimum level of yield.

For example, if the scale for winter wheat envisions six gradations of yield and a minimum yield of 18 quintals per hectare and a supplementary payment of four percent of the wage rate fund is established for this level, to determine the amount of the supplementary payment for each level of yield the figure 0.86 should be added to this amount ($8.3 - 4.0 / 6 - 1$). It follows that for the yield level envisioned in the first gradation (18 quintals per hectare), the supplementary payment is included when calculating the differentiated job rate in the amount of four percent of the rate fund, while for the second gradation it will be 4.86 ($4.0 + 0.86$), for the third — 5.72 ($4.86 + 0.86$), for the fourth — 6.58 ($5.72 + 0.86$), for the fifth — 7.44 ($6.58 + 0.86$), and for the sixth — 8.3 ($7.44 + 0.86$). The norm of the supplementary payment for each level of yield for each crop is calculated in this manner.

Then the norm of the bonus payment (percentage of wages) is determined for each level of yield. A maximum norm of bonus payment (40 percent of wages) is established for the maximum yield level, while for the second gradation of yield (the first after the minimum amount) the bonus payment norm is determined by dividing the maximum norm by the number of gradations in the scale reduced by one. It will be $40 / (6 - 1) = 8$.

The bonus payment norm for the following gradations of yield is determined by adding this quantity to the bonus payment norm of the preceding gradation. Thus, where the wheat yield is 18 quintals per hectare (the first yield gradation on the scale), no bonus is envisioned. For a yield of 18.1-20.0 quintals per hectare, the second gradation, it is 8.0 percent, while for 20.0-22.0, the third gradation, it is 16.0 (8.0 + 8.0), for 22.1-24.0 it is 24.0 (16.0 + 8.0), for 24.1-26.0 it is 32.0 (24.0 + 8.0), and for more than 26 quintals per hectare it is 40.0 (32.0 + 8.0).

When we have the job rate calculated from the rate fund increased by the established level of supplementary payments for output and the norms of supplementary labor payment and bonus payment for each level of yield envisioned in the scale, the total amount of the wages fund and differentiated job rates are calculated (see Table 1, next page).

Determining the Amount of the Periodic Advance

5.6. In the course of the year (before receiving output) the workers of brigades and teams on contract are paid for time worked according to the rate schedules (corresponding rate systems) by columns III-VI for tractor and machine operators as well as workers engaged in watering agricultural crops and columns III-V for nonmechanized jobs. The advance is differentiated depending on the average column, the volume and quality of work being done, the qualifications of the worker, and the types and makes of tractors or agricultural machines assigned to him.

The amount of the advance can also be determined beginning with the sum of expenditures for labor payment envisioned according to technological cards for work to raise the agricultural crops assigned to the brigade or team.

Pay supplements for class rating and the titles "Master of Crop Farming" and "Master of Irrigation" are added to the advance paid to workers each month.

5.7. The amount of the periodic advance for members of a mechanized subdivision may be uniform or differentiated.

In collectives where machine operators have approximately equal qualifications making it possible to insure uniform mutual replaceability in performance of field jobs, it is recommended that the same size of advance be established for all tractor and machine operators. Where there are significant differences in the levels of qualifications of machine operators, it is recommended that the amount of the advance be differentiated.

The amount of the advance may also be differentiated considering the make of tractor assigned.

5.8. The hourly, daily, or monthly wage rate (salary) may be used for the periodic advance.

A monthly wage rate or salary may be established in small collectives that are working successfully. To calculate the monthly rate (or salary), the amount

Table 1. Calculation of Differentiated Job Rates for One Quintal of Winter Wheat at 125% of the Rated Payment for Output Fund

Scale of Yield, quintals per hectare	Average Yield by Gradation Rate, quint/hec	Wage Fund at Job Rate (Col. 4 x 0.73)	Supplementary Payment for Work Quality and Timeliness		Total Wages per Hec (Col 3 + Col 5)	Bonus for Overfulfillment of Plan		Total Wages Fund/Hec, rubles (Col 6 + Col 8)	Progressively Rising Rates per Quintal, kopecks (Col 9/ Col 2)
			% of Rate Fund*	Rubles/Hec (10.50 x Col 4/100)		% of Wages# (Col 7 x Col 6/100)	Rubles/Hec (Col 6 + Col 8)		
18 (norm)	18	13.12	4.0	0.42	13.54	-	-	13.54	75
18.1-20.0	19	13.87	4.86	0.51	14.38	8.0	1.2	15.58	82
20.1-22.0	21	15.33	5.72	0.60	15.93	16.0	2.5	18.43	88
22.1-24.0	23	16.79	6.58	0.69	17.48	24.0	4.2	21.68	94
24.1-26.0	25	18.25	7.40	0.78	19.03	32.0	6.1	25.13	100.5
more than 26	26	18.98	8.3	0.87	19.85	40.0	7.9	27.75	106.7

* Change in the norm (%) of supplementary payment $(8.3 - 4.0)/(6 - 1) = 0.86$.

Change in the norm (%) of bonus payment for overfulfillment of the plan for production of output $40/(6 - 1) = 8.0$.

Note: Initial data for calculation of rates:

1. Rate fund of wages per hectare on technological card, calculated for normative yield = 10.56 rubles.
2. 125% of rate fund per hectare $(10.50 \times 1.25) = 13.12$ rubles.
3. Initial job rate for one quintal of grain $(13.12/18) = 0.73$ rubles.

of capital designated for labor payment during the year for the volume of planned work is divided by the number of months of the field season (year) and the number of tractor and machine operators in the brigade or team (including the mechanic).

Hourly wage rates are advisable to use for periodic advances in the first year of work with time labor payment in numerically large collectives and subdivisions which have significant differences between machine operators with respect to attitude toward labor.

If the length of the working day for members of the collective varies only slightly, it is possible to use a daily rate to calculate the periodic earnings (advances).

5.9. Within the limits of established ceilings on wage expenditures for a production subdivision it is possible to use a larger amount for periodic monthly advance payments during the time of the most important agricultural jobs (planting and especially harvesting). The amount of the increase in the advance during this time should be determined with due regard for the length of the working day and period of performance of the most important agricultural jobs at scheduled times.

Payment for Output and Bonus Payments

5.10. After completion of agricultural jobs (including work for next year's harvest) and receipt of output, a final accounting is made with workers of the brigades and teams based on final results. The payment fund for output is determined by multiplying the job rates by the amount of output actually produced by the collective. The resulting sum of the payment fund for output is not usually adjusted. If the brigade or team has done its jobs with high quality and thereby reduced the amount of planned work, the savings of the wages fund received remains at the disposal of the collective.

The sum of the payment for output is not adjusted for changes in the volume of work caused by the amount of yield actually received either. Only expenditures for labor payment for jobs not performed related to the next year's harvest (fall plowing, planting winter crops, and the like) must be excluded from the total of supplementary payments for output. This should be done if expenditures for labor payment for the next year's harvest were taken into account in determining the rates for output.

5.11. In exceptional cases (if work beyond the volume envisioned by the technological card was done during the year under instructions from the administration), farm managers can, with the consent of the trade union committee, adjust the sum of labor payment for output. In this case the difference between the sums of labor payment according to the technological card and the sum actually computed for the volume of work done is added to the total labor payment due the team or brigade for output according to the rates. This difference is first multiplied by the appropriate factor (1.25-1.50) for increasing the rate fund for labor payment for output and by the level of plan fulfillment or norm of production of output.

5.12. The advance amount received and the sum of earnings for outside persons enlisted for agricultural jobs are subtracted from the sum computed for output. The difference is the sum of supplementary payments for output, which is distributed per ruble of earnings with due regard for payment of outside workers enlisted. The sum of additional payments per member of the brigade or team can be distributed taking into account a labor participation factor.

5.13. Bonuses for achieving high indicators in production of agricultural output and reducing direct expenditures per unit of output can be paid according to indicators and conditions developed directly at the farm with due regard for concrete production conditions, in conformity with point 9.2 of the Model Statute on labor payment for workers of sovkhozes and other state agricultural enterprises.

The conditions of bonus payment for workers and kolkhoz members should be aimed at stimulating and increasing labor productivity, growth in the yield of agricultural crops, and improvement in the quality of output and use of machinery.

When bonus payment indicators are being worked out it is essential to try to make it as graphic as possible that the size of bonuses depends on the size of indicators included in the bonus payment system and on the final results of the labor of the brigade or team collective, the volume of output and amount of expenditures to produce it.

5.14. As experience shows, when a payment for output according to progressively increasing rates is not used it is effective to award bonuses according to scales that envision setting higher bonus amounts for an increase in the yield of the agricultural crops being raised.

The procedure for developing the scale and determining the fund envisioned for bonus payments is presented in section 5.5 above. The rates are calculated by dividing the resulting fund (see Table 1, column 8) by the appropriate yield.

Table 2 below gives a sample scale of rates for calculating the bonuses of workers engaged in raising winter wheat.

Table 2. Scale of Differentiated Rates for Calculating Bonuses for Production of Winter Wheat

Groups by Yield, quintals per hectare	Rates for Bonus Payment per Quintal, kopecks
18 (normative level)	-
18.1-20.0	6.3
20.1-22.0	11.8
22.1-24.0	18.2
24.1-26.0	24.4
more than 26	30.3

5.15. Both where bonus payments are given for growth in production of output and when they are paid according to a scale of differentiated rates it is possible to introduce independent bonus payment for savings of direct monetary and material expenditures (prime cost of output) for the production of output. But another alternative is also possible, where the indicator of savings of monetary and material expenditures is used as an adjustment figure for bonuses calculated for output.

5.16. When bonus payments are organized according to indicators worked out at the farm, if the wages fund does not have adequate money for bonus payments to workers according to these indicators money from the material incentive fund must be used.

5.17. In years which have especially unfavorable weather conditions subdivisions working on the brigade contract method can receive incentive (from the money in the material incentive fund) for exceeding the level of yield obtained in this year at the farm or at a group of farms with approximately equal production conditions.

5.18. Bonus payments to workers of subdivisions on contracts may also be made in conformity with section 9.1 of the Model Statute on labor payment to workers of sovkhoses and other state agricultural enterprises if the farm does not use sections 5.13, 5.14, 5.15, 5.16, and 5.17 of the present recommendations.

In the case of natural disasters which cause a sharp decline in yield and kill planted crops, members of the brigade or team are paid wages in full for the volume of work actually done by them on the crops assigned to the team or brigade.

5.19. Labor participation factors determined by the team or brigade council can be used to distribute collective earnings for output (supplementary payments and bonuses) among workers of the brigade or team.

5.20. It is recommended that a base factor equal to one be used to determine the labor participation factor. The actual labor participation factor for a worker is set as equal to, greater than, or less than the base figure depending on the individual labor contribution to overall results in conformity with the factors listed in Table 3 below.

Table 3. Indicators and Criteria for Evaluation of the Factors That Form the Quantitative Expression of the Labor Participation Factor (KTU)

Factors That Increase the KTU	Amount of Increase in KTU
High (compared to other workers) labor productivity	0.1-0.3
Performing jobs of differing complexity, combining occupations	0.1-0.2
High quality work	0.1-0.2

[Table continued, next page]

[Table 3 continued]

Factors That Increase the KTU	Amount of Increase in KTU
Conscientious attitude toward labor, helping comrades in the brigade, good discipline	0.1-0.2
Thrifty attitude toward the machinery used, observance of safety precautions	0.1-0.2
Factors That Decrease the KTU	Amount of Decrease in KTU
Insufficiently high intensity and productivity of labor	0.1-0.3
Where cases of failure to carry out the orders of the brigade or team leader occur	0.1-0.5
Where cases of low-quality work occur	0.1-0.2
Insufficiently conscientious attitude toward labor, where cases of violation of labor and technological discipline occur	0.1-0.2
Unsatisfactory condition of machinery used, violations of safety precautions	0.1-0.2

5.21. The quantitative evaluation (positive or negative) of the same factors of collective activity can differ in different production conditions. For example, in collectives with the same level of worker qualifications the qualifications of a worker may be disregarded or given only slight consideration in establishing the KTU. But in collectives with different levels of worker qualifications the amount of change in the KTU (greater or less) will depend more on this indicator.

For each indicator, therefore, ranges of qualitative values are established and on their basis the brigade or team, in conformity with the conditions and objectives of the work, selects the most suitable amount.

The calculated wages for output and bonus depending on the KTU established for each worker with due regard for the efficiency of his work may be adjusted in collectives which have the same size of temporary advance for all members and also in collectives with a differentiated amount of time payment (advance).

The size of the generalized indicator of the KTU for calculating payment based on final results may range from 0.5 to 1.5 when distributing supplementary payments and bonuses.

5.22. When distributing supplementary payments and bonuses according to the final results of labor with due regard for the labor participation factor it is permissible to determine this factor once at the end of the agricultural year. But even in this situation a regular account is kept of the actual attitude of each worker in the brigade or team toward labor. Table 4 (next page) gives an example of the distribution of payments based on final results of labor among members of a production subdivision taking the KTU into account.

Table 4. Distribution of Payments Based on Final Results of Labor Among Team Members Considering the KTU

Name	Occupation	Labor Payment by Wage Rate, rubles	Factor	Rate Fund Considering KTU, rubles (3 x 4)	Payment Based on Final Results of Labor			Wages for Working Team (3 + 8), rubles
					Total Rubles	Per Ruble Factor (6 ÷ 5)	Per Worker (7 x 5), rubles	
I. T. Ivanov	Tractor-Machine Operator	867	1.0	867.0	-	1.103	956.3	1,823.3
G. S. Yurkov	Tractor-Machine Operator	813	1.1	894.3	-	1.103	986.4	1,799.4*
B. I. Sushkov	Tractor-Machine Operator	794	1.0	794.0	-	1.103	875.8	1,669.8
S. I. Petrov	Combine Operator	843	1.3	1,095.9	-	1.103	1,208.8	2,051.8
G. G. Pavlov	Tractor-Machine Operator	750	0.9	675.0	-	1.103	744.5	1,494.5
A. I. Ivanov	Set-Up Specialist	770	1.0	770.0	-	1.103	849.3	1,619.3
K. P. Sharov	Tractor-Machine Operator	802	0.7	561.4	-	1.103	619.2	1,421.2
I. S. Pavlov	Tractor-Machine Operator	912	1.0	912.0	-	1.103	1,003.6	1,915.6
Totals		6,551	-	6,569.6	7,243.9	1.103	7,243.9	13,794.9

* [Apparent mistake in arithmetic, should be 1,880.7.]

5.23. At certain farms the degree of labor participation by workers is determined using several partial factors. For example, kolkhozes in Sarayevskiy Rayon of Ryazan Oblast use two factors, use of available working time and labor discipline, as the basis for calculating the overall factor.

The coefficient of use of a worker's available working time for a certain period (year, period of field work, or month) is calculated by dividing the time actually worked by the worker during this period by the normative working time (in worker-days) minus time losses for justifiable reasons (illness, vacation, study, performance of deputy duties, and the like).

The coefficient of use of a worker's available working time during a shift is determined by dividing the number of hours actually worked during the shift by the normative length of a shift in hours.

The labor discipline factor includes losses of work time during the year or a certain period of time occurring through the fault of workers and calculated according to the table of arrival on the job, documents releasing workers from the job, and so on. The quantitative figure is calculated on the basis of the ratio between the total number of complete days of working time lost owing to violations of labor discipline (calculated per worker or for the collective as a whole) and the actual available working time of one worker of the collective during the period under consideration (in days).

The coefficients of use of available working time and labor discipline found in this way for each worker are combined into an average generalized labor participation factor for workers by simply adding them together and dividing by the number of indicators.

Kolkhoz and sovkhoz administrations and trade union organizations regularly analyze the procedures of determining and applying the KTU and on this basis work out measures and give recommendations to the brigades and teams on making its application more efficient.

To insure efficient use of the KTU, before the start of the period of field jobs there must be a general brigade meeting that ratifies the indicators for determining the KTU and the amount of decrease or increase in it depending on these indicators. Observance of this condition will enable the collective to avoid conflict situations.

Disagreements that arise in certain cases concerning the amount of the KTU are resolved at a general meeting of brigade members; where agreement cannot be reached the procedures established by law are followed.

5.24. Where workers leave the brigade or team before the end of the year for justifiable reasons (conscription into the Soviet Army, admission to school, promotion to another job, illness, and the like) the supplementary payments for output and bonuses are calculated proportional to the earnings received by the worker for the time worked. When a worker leaves the collective for an improper reason before completion of the harvest and performance of key jobs in incomplete production, the supplementary payments for output and bonuses are not calculated for this worker.

Individual brigade or team members may be fully or partially deprived of bonuses at the suggestion of the collective or decision of the sovkhos directors (kolkhoz board) for production mistakes and violations of labor discipline (coming to work late or not coming, coming to work drunk, refusing to carry out the orders of the team or brigade leader or specialist, and other such violations).

5.25. Growth in the technical equipment available to the sector, introduction of higher-yielding varieties of agricultural crops, and broad use of chemicals will unquestionably promote a rise in labor productivity and the corresponding decrease in expenditures for labor payment calculated per unit of output. Therefore, the conditions for payment of wages and bonuses can and must be periodically reviewed and refined as production organization and technology is improved. At the same time, annual refinement of material incentive conditions has a negative psychological effect on production workers. The conditions and amounts of bonus payment must be stable; they can be revised once every 3-5 years.

6. Organizational Measures and Necessary Prerequisites for Successful Introduction of the Collective Contract

Introduction of the collective contract necessitates refinements in management and planning, material-technical supply, and various other matters.

For this reason the managers and specialists at every farm must prepare themselves carefully for the transition to the new form of labor organization and payment. It is essential to thoroughly substantiate the most acceptable forms of labor collectives under conditions of the farm and determine their sizes and composition taking into account local conditions, to explain the essential features of the new forms of labor organization and payment to machine operators, to work out the labor payment system, and to give brigade and team managers constant help in their work while also respecting their substantial independence and enhancing their role.

Before brigades and teams are switched to the contract considerable work must be done to study and propagandize progressive know-how and work through the present recommendations.

Where possible it is essential to enlist workers from science-production centers of scientific organization of labor and scientific organizations concerned with economic contracts in the work of introducing the collective contract. Scientific workers must also be enlisted for conducting consultation sessions and seminars and instructing enterprise workers in questions of introducing rational forms of labor organization.

The collective contract can be introduced at all farms of a rayon (or trust). But it is also possible to go by stages, where the contract is first introduced at two or three farms (or at certain subdivisions) which are typical of certain groups of farms in the rayon by size, level of specialization and concentration of production, available personnel and their composition, and available technical equipment. These farms or particular subdivisions should be a kind of

school of progressive know-how for all the kolkhozes and soykhozes of the rayon as they gradually switch to the collective contract. Careful thought must be given to choosing the farms, especially for initial introduction. The managers and specialists of these farms must participate actively in introduction of the collective contract; they must also take steps to refine the structure of production and management.

The Statute on procedures for granting class ratings (classes I and II) to agricultural specialists who head brigades in crop farming and animal husbandry at sovkhozes and other state agricultural enterprises, ratified by the USSR Ministry of Agriculture on 22 March 1982, in Section 5 authorizes granting the titles of classes I and II to specialists who head brigades that are successfully working on the collective contract method (using the job-plus-bonus system of labor payment with periodic advances or working on a single contract for the brigade).

Persons who have been awarded class ratings (classes I and II) are given wage supplements (as percentages of the position or reserve salary or wage rate) in the following amounts: up to 50 percent for class I, and up to 30 percent for class II.

The collective contract for output is being introduced most successfully at farms where most of the machine operators expressed a desire to work under the new conditions of labor organization and payment.

In order to introduce the brigade contract successfully, farm managers must be timely and exact in performing their obligations to the brigades and teams with respect to supplying tractors, combines, agricultural machines, fertilizer, seed, means of transportation, technical and cultural-domestic services, and the like.

A whole range of factors in agricultural production — organizational, technical, economic, and sociopsychological — are involved in the transition of mechanized subdivisions to collective forms of material incentive; failure to adequately consider any one of them may lead to a diminishing of the stimulating role of wages and worsening production indicators for farm work.

6.1. Sovkhoz and kolkhoz managers, specialists, and workers and kolkhoz members must keep in mind that highly efficient use of the job-plus-bonus system of labor organization and payment with periodic advances demands a higher level of work organization, creation of certain production conditions, and performance of necessary preparations at each particular farm. The requirements for planning production, material-technical supply to mechanized subdivisions, fulfillment of contract obligations, and monitoring the work of production subdivisions (especially in the first year of work) should be higher than where the piece-rate system is used.

6.2. It must be emphasized that successful work by mechanized subdivisions on the job-plus-bonus system of labor payment with periodic advances depends greatly on whether farm managers and specialists and higher-ranking bodies give constant attention to this work.

6.3. Experience shows that the spread of the collective contract has gone poorly in a number of places because people there have become distracted by all kinds of material incentive for performance of various current jobs in the course of the year without considering the final results of the activity. Then the workers involuntarily become accustomed to incentive "for everything." Therefore we have many farms which, although the production results of their work are not as good, are paying workers at the level of the leading farms, and sometimes even higher. Under these conditions the production subdivisions using the piece-rate payment system often have greater earnings than mechanized subdivisions on the collective contract.

There must be persistent efforts to achieve broader use of sound norms in setting ceilings for expenditures on wages and to organize rigorous control of labor payment, rational use of labor payment money, and consistent employment of cost accounting principles. All these things will create the necessary economic foundation for broader introduction of the collective contract in agriculture.

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EDUCATION

SELECTED ARTICLES ON VOCATIONAL TRAINING, CAREER ORIENTATION

Tajik Schools Source of Cadres

Dushanbe KOMMUNIST TADZHIKISTANA in Russian 2 Nov 82 p 2

[Article by Kh. Davlyatkadamov, Tajik SSR minister of higher and secondary specialized education: "The Source of Our Cadres"]

[Text] "Socialism has been able to solve a problem of truly historic significance: arming the millions of working people with the achievements of culture and opening up all sources of knowledge for every person regardless of his or her social status and nationality" — from the CPSU Central Committee decree entitled "The 60th Anniversary of the Formation of the Union of Soviet Socialist Republics"

Graduates of the republic's higher educational institutions and tekhnikums are working in the most diverse areas of the republic economy. You meet young men and women with the insignia of Tajik State University imeni Lenin, the Polytechnic Institute, and the pedagogical institute everywhere: at the construction sites of the Rogunskaya and Baypazinskaya hydroelectric power plants, in the shops of the Tajik Aluminum Plant and the Yavan Electrochemical Plant, in geological exploration parties, at planning and design bureaus, in scientific research laboratories, and at general educational schools.

Each year the republic's higher and secondary schools send out more and more new detachments of highly skilled specialists and production organizers.

From the vantage point of the years that Tajikistan has spent in the fraternal family of USSR peoples the achievements of the republic in higher and secondary specialized education are especially visible. We must recall that work in this area was begun from practically nothing.

Today the republic largely supplies its own specialists. The higher educational institutions train cadres in 65 specializations, while the secondary

specialized schools train 120 kinds of specialists. There are 138 college students and 97 secondary students for every 10,000 inhabitants of the republic.

During the last five-year plan the republic maintained a rate of development of higher and secondary specialized education that is somewhat greater than most other regions of the country. In comparison with the 9th Five-Year Plan 21 percent more specialists graduated from higher educational institutions and 13 percent more from tekhnikums. The economy received about 100,000 specialists with higher and secondary specialized education. In the first year of the 11th Five-Year Plan we trained another 20,900 specialists.

Scientific-technical progress, swift economic development, and the demands made of higher education by the 26th CPSU Congress have made improving the quality of specialist training a pressing need. This task is being accomplished by improving the educational and indoctrination process, strengthening the material base of the higher educational institutions and tekhnikums, raising the qualifications of professors and teachers, being more demanding of students, and setting up new schools and departments. Higher education has begun training professionals in 12 new specializations just in recent years.

Tajik State University, the leader in republic higher education, has become a true scientific and educational methods center. It has been given the right to grant the academic degree of doctor of sciences in a number of disciplines.

At the 26th CPSU Congress Comrade L. I. Brezhnev observed that "we must use the scientific potential of the higher educational institutions more fully. They have almost half of all doctors and candidates of sciences." This comment has become a mandate for republic higher education. The annual volume of financing for scientific research has doubled recently and is about 4 million rubles. It is noteworthy that the higher educational institutions are searching for ways to make scientific work highly efficient and introduce new developments in practice. The university and institutes of the republic ministry of higher and secondary specialized education are participating in scientific work on 13 comprehensive target programs of national and republic significance.

The higher educational institutions of the republic have established stable ties with schools in Moscow, Leningrad, the Ukraine, Uzbekistan, Kazakhstan, and Kirghizia. Joint research is helping solve the most pressing scientific problems and is becoming part of the country's scientific potential.

The economic usefulness of contract work done by higher educational institutions is growing steadily. The volume of this work this year is about 3 million rubles, which is more than last year. Special attention is being devoted to projects related to raising the efficiency of agricultural production and solving the problems posed by the May 1982 Plenum of the CPSU Central Committee. The most valuable scientific developments that have been introduced are an integrated system to protect cotton against pests, use of physiological-biochemical techniques of identifying highly productive forms of cotton, breeding and introducing fast-maturing wilt-resistant varieties and hybrids, cultivation of citrus crops (tangerines and oranges), study of medicinal plants that grow in Tajikistan and others.

Students are becoming more and more actively involved in scientific research. A significant number of the diploma projects of graduates who work on pressing problems of industrial and agricultural production find application in the economy. Last year alone 40 diploma projects of interest to production were defended at Tajik State University imeni Lenin, while 80 such projects were done at the Tajik Polytechnic Institute and 76 at the agricultural institute.

Many diploma projects are also recommended for publication. A number of diploma projects by graduates of the Tajik Polytechnic Institute, for example those of Kh. Saidov and N. Nikolayenko, have aroused the interest of construction organizations in Dushanbe and will be used by them.

Higher and secondary specialized education does more than simply shape the vocational outlook of students; it also gives them maturity as citizens and a Marxist-Leninist worldview and instills public activism. The entire educational and indoctrination process aims at instilling young people with an activist posture in life.

It is difficult to overestimate the importance of the student construction detachments. They have become a true school of diligence, conscientiousness, collectivism, and internationalism. This summer the students worked on construction of the Rogunskaya hydroelectric power plant, the Beshkent irrigation system, the Tursumzadev porcelain plant, and in other rayons of the republic and country. Students are now helping cotton growers gather the harvest.

There are deputies to local Soviets and the Supreme Soviet of the Tajik SSR among the student collectives. The state-minded approach to work, a conscientious attitude toward public duty, and activism are taking root among the young people.

Our higher education is helping train workers for friendly developing countries. There are 900 representatives from Afghanistan, Laos, Mongolia, Sierra Leone, Djibouti, and other countries studying at the university, the polytechnic institute, the agricultural institute, the medical institute, and Dushanbe Polytechnikum in 29 specializations.

Higher and secondary specialized education in the republic is moving ahead on a broad scale. Physical facilities are improving each year. A university student village is being built with the latest furnishings, and villages for the medical institute and several other schools are under construction. The teaching collectives are becoming stronger and more highly qualified. The higher educational institutions now employ about 1,500 candidates of sciences and 106 doctors of sciences. The learned teachers are making every effort to see that the republic receives outstandingly trained young specialists.

Training Next Generation of Workers

Ashkhabad TURKMENSKAYA ISKRA in Russian 4 Nov 82 p 2

[Article by N. Vyakhirev, deputy chairman of the Turkmen SSR State Committee on Vocational and Technical Education: "Train the Next Generation of Workers"]

Despite the fact that a large group of skilled workers graduates in the republic each year (this year alone the vocational and technical schools admitted more than 26,000 young men and women), it is not at present possible to meet the needs of the economic sectors. The question is especially critical with the training of construction specialists.

The training of skilled workers is being held back primarily by the lack of schools for new developing sectors of the economy and slow construction of vocational and technical schools. For example, at such construction projects as the carpet combine in Bezmein, the stocking and knitted goods factory in Nebit-Dag, and the spinning factory in Neftezhavodsk plans do not contemplate the construction of vocational-technical schools. The establishment of base vocational-technical schools is often held up by an inadequate contingent of people working at the enterprises. This situation has taken shape in the system of the Turkmen SSR Ministry of Light Industry and certain other ministries and departments. And the projects under construction today cannot possibly meet the growing needs of the vocational-technical education system. For example, construction work on the vocational-technical village in Ashkhabad, planned for 4,320 students, has been underway by the Turkmen SSR Ministry of Construction since 1978. Plans break down year after year; in the first nine months of this year construction-installation work has been only 70 percent fulfilled. In the agricultural sector where our State Committee is the client and the Turkmen SSR Ministry of Rural Construction is the contractor just 53 percent of capital investment is being incorporated. Matters are no better with the construction of vocational-technical schools for many other ministries and departments. Therefore, we have nowhere to train cadres in many vocations which are so essential to the economy.

The directive agencies adopted a decree to send thousands of graduates of general secondary schools each year on Komsomol passes to technical schools in the RSFSR where they will learn 21 worker vocations — printing and binding workers for the printing industry, universal lathe operators for all sectors of the economy, construction specialists, and specialists in setting up industrial equipment. These young men and women will study in the oblast centers of Kalinin, Bryansk, Kursk, Kuybyshev, and Saratov. Along with theoretical knowledge in their vocation they will receive practical training at leading enterprises in these cities. After completing school these representatives of our republic will work at enterprises in Ashkhabad, Mary, Chardzhou, Tashauz, and Krasnovodsk.

It must be noted that the Turkmen Komsomol has taken an active part in selecting young people to study in the central cities of the RSFSR. Komsomol headquarters were set up at all schools and carried on vocational guidance work. But if we are to continue successfully sending young people on Komsomol passes to study in the RSFSR we must, beginning next year, carry on vocational guidance work in graduating classes during the regular school year, not during examinations as has been done before. In our opinion, this work should be done by both the general educational schools and the enterprises where the future specialists will work later. So far, however, the enterprises are not providing practical help in this important business, figuring that the schools themselves will fulfill the recruiting plan and it is their job to ask how many specialists will be graduated and where they will be sent. This practice cannot be tolerated.

It is essential for the base enterprises to face up to their vocational-technical schools and give them practical help in recruiting, strengthening the production training base, and allocating materials for the educational process. It is time for enterprise managers to look after creating normal living and domestic conditions for graduates and offering them jobs taking into account their vocation and rating. There must be concern for the teachers too.

Our common challenge of continuing to replenish the ranks of the glorious working class must be met through the combined efforts of the ministries, general schools, Komsomol, and vocational-technical schools.

Polytechnic Institute Promotes Practical Training

Moscow PRAVDA in Russian 10 Nov 82 p 3

[Article by G. Denisenko, rector of the Kiev Polytechnic Institute and corresponding member of the Ukrainian SSR Academy of Sciences: "Education Should Continue at the Plant"]

[Text] One out of 10 persons employed in our country has higher education. The higher technical schools deserve considerable credit for this. But the prestige of the engineering profession has declined somewhat in recent years. We can feel this when we are admitting young people; competition for certain schools is less this year than it has been in the past. There are various reasons for this. The curricula are becoming more complex with the development of science and technology. The low level of earnings for beginning engineers in a number of sectors has an effect. Sometimes graduates are not accepted for work in their chosen specialization, even though there were requests for them during the assignment process.

But there is hardly a need to increase the number of participants in the competition at all costs. Another path seems more reasonable. We must refine the vocational orientation of secondary students and working young people. We must find precisely those who will become engineers by vocation after study.

We received a good new class this year. Almost one-third of those to whom student tickets were given have labor experience. Many of the first-year students had supplemented their education even before the entrance exams. About 500 of them studied in preparatory divisions and 1,500 studied in special schools. To us it was important at this time to determine not only each person's level of knowledge, but also their inclinations and interests.

But in order to make their study effective it is essential to determine precisely what kind of problems the present first-year student will have to face in the future and what knowledge he needs to be given for this purpose while at the higher educational institution. Three years ago the institute, with the help of industrial enterprises and scientific research and planning-design organizations, worked out "models" of specialists for the 1990's. We took

account of needs and paths of development in the particular sectors and comments received about our graduates. These "models," together with "qualifications descriptions" recommended by the USSR Ministry of Higher and Secondary Specialized Education, were the basis for refining the curricula of the courses and organizing practical work training.

I would like to call attention to the main requirement of the times: the technical higher educational institutions must have closer working ties with enterprises, associations, and departments. It is important here for initiative to be shown not only by the institutes, but also by production and sector managers, the ones who are waiting for the specialists. We need to think together about how to improve the training of future engineers taking into account future needs.

It seems to me that long-term agreements between institutes and sectorial ministries which envision mutual obligations for selection, training, and assignment of specialists can be useful. We have had such contracts for 10 years with the USSR ministries of Power and Electrification and Electrical Equipment Industry and the republic Ministry of Light Industry. Agreements are still being worked out with several other sectors. We define the educational qualifications of the specialists and the number that the institute must train. For its part the client ministry gives concrete help in organizing practical training for students and on-the-job training for young engineers and helps build up physical facilities for education. Provisions are also made for the subject matter of joint scientific research projects, training cadres with higher qualifications through graduate study, and on-the-job training for teachers at leading enterprises.

Daily practical contacts with large plants and associations whose engineering collectives receive our graduates each year are very useful. For example, the school of chemical machine building discussed its curricula with leading specialists at the Kiev Bol'shevik Association. At their recommendation courses in the technology of chemical machine building and fundamentals of scientific research were broadened. Departments of the institute have operating branch offices at the Association imeni S. P. Korolev and the Tochelektroprobor and Kristall associations. They are staffed by plant scientists and specialists. They give special classes for students and direct their course and diploma projects. This makes it possible to relate the training of engineers more closely to production requirements.

Incidentally, practical ties with enterprise collectives are also very useful for us, the teachers, for without the help of production workers we cannot know whether the training of our graduates is meeting current requirements. We make periodic questionnaire surveys of the quality of our work and find out whether the knowledge a specialist has received is sufficient to perform the duties of a design engineer or production organizer and what mistakes have been made in teaching. We receive many interesting suggestions from this, and many of them have already been implemented.

On-the-job training for beginning engineers serves the same purpose. This was introduced, of course, almost 10 years ago for the purpose of reducing the

period of adaptation for a new specialist under conditions of independent work. It is working out very well. We consider the results of on-the-job training to be an important criterion for evaluating the level of cadre training. We carefully study information received from the enterprises and analyze comments by production workers. For example, during discussion of the results of on-the-job training of graduates the department of welding equipment invited specialists from the Institute of Electrical Welding imeni Ye. O. Paton and the chief designer of the All-Union Planning Design Institute of Welding to its meeting. They had a business-like and principled discussion. In the end they decided to introduce a new course in the program, entitled "Power Sources for Welding," and to give a series of lectures on robot engineering complexes.

A number of enterprises, however, take an attitude toward organization of on-the-job training for engineers that is, to put it mildly, formalistic. The specialist is left on his own right from the start. He is simply given a position, sometimes without considering qualifications and educational background. You ask a production manager how some particular young engineer has been doing and he has no answer at all. It turns out that no one took care to see that the period of on-the-job training served as a kind of test of maturity for the new employee.

In recent years the institute has developed a comprehensive system for molding specialists taking into account their capabilities, inclinations, and interests. It identifies the main, fundamental areas of work. An assistant rector is in charge of work in each of them. For example, the subject major departments are subordinate to the rector responsible for design education work and he organizes the training of students in design in the schools. The institute methods council also consists of sections that correspond to these work areas. Changes have also been made in the structure of school administration and evaluation of the educational and indoctrination work of the subdivisions. As a result, work has begun to be done more purposefully, for example, to involve students in scientific research that corresponds to the real needs of production. It now encompasses not only the classes but also the student scientific-technical society. Each year we conduct competitions in which thousands of our students test their efforts and capabilities. Last year, for example, students, either independently or as co-authors, submitted more than 30 applications for inventions and published about 300 scientific articles.

At the same time a number of problems have arisen. Suppose that a graduate has defended a diploma project which contains a scientific innovation. Who is to carry these proposals through to introduction? Or take the matter of production training. Sometimes a student who is going through it in a bored and mechanical manner will become caught up and interested in a useful research job; after all, there are still many tight spots at the enterprises which good students under the guidance of their teachers could handle. Considering this we began forming student brigades for the practical training period. They are headed by associates of the institute. Thus, the welding school has a successfully operating student design-technological bureau. The students perform assignments for the Institute of Electrical Welding imeni Ye. O. Paton, the

All-Union Institute of Welding, and other organizations. Their designers direct the work of the young people. In three years the bureau has done 24 diploma projects on real subjects and all were accepted by the clients. Last year alone five applications for inventions were submitted. The group of future designers helped out the Kiev Leninskaya Kuznitsa Plant and the aviation plant. A student creative brigade to refine welding technology on sea-going ships was formed from students who have welder's qualifications. Working on Sakhalin, the young people were very helpful to the ship repair yard; the economic impact of their labor was evaluated at almost 100,000 rubles.

The institutes should bolster laboratory facilities for research work. This is true. Nonetheless, we believe that the student's principal working place is the place where he will be working when he has his engineering degree. Indeed, no matter how much money the state may appropriate, higher educational institutions will not be able to have all the training equipment that a contemporary enterprise or scientific research institute has. The proper solution here is to train students, beginning with the third year, right in the plant shops and laboratories of scientific research institutes. Then it will be possible to involve more highly qualified production specialists and scientists from sectorial institutes in educational work. Through our joint efforts we could introduce the individual forms of training so necessary under current conditions on a broader scale. Unfortunately, not many enterprises today support the institutes on these proposals.

In a few years today's students will be participating in meeting the crucial challenges of further development of the national economy. Therefore we have a task of enormous significance: to develop specialists who are capable of becoming active carriers of scientific knowledge and technical innovations. The higher educational institutions must meet this challenge hand in hand with those for whom we are training tomorrow's engineers.

Outstanding Vocational-Technical School Profiled

Moscow PRAVDA in Russian 27 Nov 82 p 3

[Article by G. Zhavoronkov, Minsk: "Just Yesterday They Were Only Boys..."]

[Text] In the coming years two-thirds of the graduates of secondary school (8th and 10th grades) are supposed to continue their education in the vocational-technical schools. This is, so to speak, our schedule for the future. But does it coincide with the plans of the students themselves?

Although not claiming rigorous statistical standards, in September I conducted a questionnaire survey among the eighth and 10th grade students of one school. The questionnaire had just one question: what are your plans for next year? Only two or three out of each class tied their fate to the vocational-technical system; all the rest saw themselves going either into ninth grade or to an institute. Their parents had the same views. But the teachers' conclusions were different. They thought that at least half of each eighth grade class should continue studies at vocational-technical schools and only seven 10th graders should enter higher educational institutions.

This is certainly a striking discrepancy. Perhaps the question of future plans was put too early, and the situation will change as graduation exams come closer? As experience demonstrates, it does change, but insignificantly. Year after year serious problems arise with filling the vocational-technical schools, and sometimes the recruitment plan is not fulfilled.

There are many reasons for these difficulties, and often they have a lengthy history. But the interesting thing is that even the knottiest set of problems retreats before the intangible force of a school's reputation.

Minsk Vocational-Technical School No 9, which trains metallurgical workers, is frequently referred to in the city by the last name of its director, Gennadiy Nikolayevich Shibko. There is solid logic in this. We do not entrust our children to a sign or to the walls of buildings; we entrust them to a person.

Gennadiy Nikolayevich loves to repeat that he is not a professional teacher. After the war he graduated from an artisan school, studied at a higher educational institution of engineering, and worked as a shop head at the Minsk Automotive Plant. Then when it was suggested that he transfer to the vocational-technical school, he agreed with no particular enthusiasm. It is one thing to work and be responsible for yourself; it is something quite different to teach others and be responsible for them. But he is now in his 30th year of work at the school. Of course he is a natural teacher and there is nothing accidental about his career. True pedagogy does not come from textbooks at the pedagogical institute; it is a collection of problems for each day.

A third-year student walked past the director. Yesterday he had a thick head of hair, but now it was closely trimmed. For a second Gennadiy Nikolayevich's eyes showed surprise, then he answered his own question: the day before the student had seen his comrade off to the army, and he had cut his own hair as a sign of solidarity.

To understand a student today means to anticipate his behavior tomorrow and think about your response.

Two groups of students cut seventh period. The director frowned tensely and was silent. No, he was not thinking about their punishment; he was searching for the reason for this behavior. For him this is the main thing. Someone suggested that the stipend had been paid that day. The director was silent, which meant that was not it. Then he opened up the newspaper and carefully studied the television programs. He smiled in satisfaction. A film on karate was being shown. That made everything clear. The Boys could not resist the temptation.

On the following day he did not hurry to call the group in. He was waiting. The children, worn down by uncertainty, came in themselves to ask for punishment. To Shibko this was more important than the punishment.

Not considering himself a pedagogue, the director is in no hurry to give this title to others either. To him a degree from a higher educational institution by itself is no guarantee of pedagogical sensitivity. And working experience at a general educational school is not an indisputable ticket to the

vocational-technical school either. He needs people who not only know the secrets of relations between adults and children, but also are able to carry on a regular, balanced dialogue with their students. Gennadiy Nikolayevich is always repeating: "We do not have children here; we have young workers." Only those in the pedagogical collective who are able to understand the students and arouse their enthusiasm receive recognition.

G. N. Shibko's school is a drop in the ocean of the vocational-technical educational system. But it gives an idea of the current potential of vocational-technical education.

It is not possible to conduct ordinary lessons in the vocational-technical school in the same way as a general educational school. It is both easier and harder. Some time ago the psychologist D. Uznadze explained that children lose their interest in learning because we give them knowledge which they will not need until some indefinite future time. At the vocational-technical school all the knowledge the students receive in chemistry, physics, and mathematics is needed immediately. Without it they will not be able to assemble electrical circuits, obtain the necessary alloy, or machine the part. In this way the job of the vocational-technical teacher is easier. It is more difficult because the only way the teacher can make the students enthusiastic about the subject is to clearly represent production technology.

At the vocational-technical school the teacher and the foreman are more than just allies; they think alike. The knowledge received in the classroom and evaluated by teachers is immediately checked in practice by the foreman, and vice versa. The student cannot conceal what he has failed to learn. But there is no reason for him to conceal it. He is put in a situation where there simply are no unnecessary, noncompulsory subjects.

But perhaps the standards of knowledge are lower in vocational school?

I am going to conduct a class at vocational-technical No 9. The liveliness surprises me from the very start. There are 15-20 students calling out to answer every question. Like first-graders they seem hurt if you do not notice their readiness to demonstrate their knowledge. You have to step up the rate of questions. No, their knowledge is not less, but the rhythm of the lesson is more intense than at general school. After three hours in a row I know I am tired.

I have been trying to understand what is going on here for a long time. After all, among them are not only yesterday's good students, but also the quiet ones from the back rows who formerly had unspoken agreements with their teachers: don't bother me and I won't bother anyone else.

The solution is not simple. But it lies in the fact that the students here are more equal in knowledge. The pace of the lesson is faster, but there is more time to grasp things. The two-year general school program is stretched out over three years. In the end their knowledge is such that all who want to go to their native higher educational institutions easily pass the competitive exams.

The production training foreman has a special status at the school. He is responsible for everything: the vocational training of the students, their external appearance, discipline, and even failure to master classroom lessons.

It is interesting that a group unconsciously begins to imitate its foreman from the very beginning. They adapt his habits, language, and style of communication. The director has only to glance at a student to know which foreman he works with. By itself this atmosphere disposes a good foreman to know everything about his subordinates: their enthusiasms, and even their personal affairs. On this basis, of course, it is easier to find the individual approach to each student. But as we know, trust requires tact and sensitivity. Is this proper, however, in relations with boys?

"They are not boys. They are mature people who still have many boyish characteristics," Shibko repeats. Adopting a vocation fundamentally changes the social situation of an adolescent. In the first place, his time budget is different: he spends almost 10 hours a day at school (7-8 hours in class plus sports sections and study groups) and 3-4 hours at home preparing for classes.

He has his own personal money which he has earned, and looks on it in an entirely different way than money given to him. Most parents note a clear change in the character and habits of their children. They develop discipline, concentration, and responsibility.

They wear their first suit purchased with money earned in practical training work as if it were made of the best fabrics. All the things which before had seemed to exist in an abstract way now assume concrete significance and the adolescents begin to see the labor invested in them.

After two or three months the student at the school is certain that his foreman is the best and that his vocation is the most essential one. They propagandize it enthusiastically among their friends and acquaintances.

That is all true. But why then is G. N. Shibko already thinking about summer and the new class today? Last spring he organized vocational agitation in such a way that the young people admitted to his school had all "4's" and "5's" in their records. The agitators for the vocation of metallurgical worker (the upperclassmen of the vocational-technical school) went to the general educational schools with their excellent performing ensemble and talked excitedly about their work and studies.

This would seem to be pleasing, but the directors of the general schools were upset. The students going to the vocational-technical school were ones they did not want to lose.

The problem of training worker cadres is becoming a matter of state importance. At the Minsk city committee of the party, for example, it is not one of the everyday matters, but always an extraordinary one. They are clearly aware that a condition for the future successes of vocational-technical education is a sharp increase in the level of ideological and moral indoctrination. This requires finding more and more men like Shibko, promoting them to pedagogical

work, and supporting them. The city committee is slowly but surely changing the usual evaluations of the achievements of the general school. They commend them for medal-winners and quality of knowledge, but they also demand participation in vocational guidance and providing students for the affiliated vocational-technical school.

The changes are apparent. G. N. Shibko recently met the director of a general boarding school and asked with concern why none of his eighth-graders were among the new students of the year. The director answered, "I'm sorry, Gennadiy Nikolayevich, but we did not have any good enough."

"Good enough." It appears that this is the only approach to vocational-technical education that can be called a state approach today, looking not only at present concerns but also future ones.

The goal of vocational-technical education is to admit good students and graduate good students. The young worker's diploma must guarantee professional and moral maturity.

Further Improvement of Secondary Education

Moscow UCHITEL'SKAYA GAZETA in Russian 27 Nov 82 p 2

[Article: "In the Central Committee of the Ukrainian Communist Party"]

[Text] The Central Committee of the Ukrainian Communist Party has reviewed the issue "The Work of the Ukrainian SSR Ministry of Education on Further Improvement of the Education and Indoctrination of Students in General Educational Schools and Preparing Them for Labor in Conformity with the Resolutions of the 26th CPSU Congress and the 26th Congress of the Ukrainian Communist Party."

The decree notes that work is going forward in the republic to develop universal compulsory secondary education of young people and to prepare them for life and labor. The pedagogical collectives and primary party organizations of the school are devoting a great deal of attention to improving the educational and indoctrination process and to ideological and moral conditioning of the students. New forms and methods of teaching and instilling students with a conscious attitude toward study are being introduced. The transition to improved curricula and syllabi is being completed. The secondary schools and most of the eight-year schools have been switched to the "office" [kabinetnaya] system of teaching. Practically all students in the advanced grades are involved in intensified labor training. The quality of the teaching staffs has improved, and one out of four teachers is a communist. The extended-day groups have received further development. The physical facilities of the schools have been strengthened. In the last seven years schools for 1.2 million students have been built. Library resources at the schools number more than 100 million textbooks which are used free of charge by students in the first to ninth grades.

At the same time the decree points out that the Ukrainian SSR Ministry of Education, its local agencies, and pedagogical collectives are still not fully insuring a rise in the quality of education and indoctrination of students, preparation of young people for socially useful, productive labor, and sound vocational selection. The needs of the schools in certain specializations are not being fully satisfied. There are shortcomings in their preparation. The work of the Central Institute for advanced study by teachers and some of the oblast institutes needs improvement.

The Central Committee of the Ukrainian Communist Party obligated the Ukrainian SSR Ministry of Education and the departments of public education to be guided by the resolutions of the 26th CPSU Congress and the 26th Congress of the Ukrainian Communist Party and the decree of the CPSU Central Committee and USSR Council of Ministers entitled "Further Improvement in the Education and Indoctrination of Students at General Educational Schools and Preparing Them for Labor," and to insure further development of compulsory secondary education of all young people, to take additional steps to raise the efficiency and quality of education to meet the demands of scientific-technical progress and conform to advances in pedagogical-psychological science and practice, and to use the "office" system effectively.

Work should continue on further improvements in communist indoctrination of young people. Pedagogical collectives must concentrate efforts on instilling students with Soviet patriotism, socialist internationalism, and deep respect for the hymns, seals, and flags of the USSR and the Union republics and develop an activist posture in the young men and women. Preparations for and celebration of the 60th anniversary of the formation of the USSR and the 40th anniversaries of outstanding victories by the Soviet people in the Great Patriotic War should be used broadly for this purpose. The Ukrainian SSR Ministry of Education, together with Ukrsovprof [possibly Ukrainian Council of Trade Unions], the Central Committee of the Ukrainian Komsomol, the Ukrainian SSR Ministry of Culture, the Ukrainian SSR State Committee for Sports, and the republic creative unions, should take concrete steps to intensify ideological-political, moral, esthetic, and physical education of children and adolescents.

It is recognized as essential to insure a further improvement in the work of schools on polytechnic education, labor indoctrination, and vocational guidance of students. Public educational agencies must improve the system of labor training at every school. Students should gain experience in carrying out production orders at all interschool production training combines, training shops, and sections. The physical facilities of these educational units must be strengthened in the 11th Five-Year Plan through the combined efforts of the ministry, the executive committees of local Soviets of people's deputies, interested ministries and departments, industrial enterprises, construction organizations, kolkhozes, and sovkhoses.

It has been proposed that during 1982-1985 plans of work with pedagogical cadres be developed and implemented in every oblast. These plans should envision fully meeting the needs of general educational schools for teachers, raising their ideological-theoretical and scientific methods level, and creating necessary conditions for labor and everyday living for teachers, especially in rural areas. Teachers' houses, palaces and houses of culture, and clubs should be used more

broadly to organize cultural leisure activities. The quality of vocational training for future teachers must be raised and selection of young people for study at pedagogical higher educational institutions and schools improved. The work of scientific research institutes of pedagogy and psychology in the Ukrainian SSR must be directed to studying pressing problems of education and indoctrination and progressive know-how and providing practical help to educational institutions.

The attention of the board of directors and party committee of the Ukrainian SSR Ministry of Education was directed to the need to improve the working style of the administrative apparatus and methods used for management of public education departments and schools, and to eliminate formalism in the work of certain pedagogical collectives. It is recommended that steps be outlined to increase the personal responsibility of members of the board of directors and heads of administrations and departments of the Ukrainian SSR Ministry of Education for solving future problems of public education, organizing performance of decisions that are adopted, and giving effective help to educational departments and institutions.

Ukrainian SSR Gosplan, Ukrainian SSR Gosstroy, the Ukrainian SSR Ministry of Education, the oblast Soviets of people's deputies, and the Kiev and Sevastopol city Soviets of people's deputies are ordered to determine prospects for improving the system of day-time, evening, and extension general educational schools for the period until 1990. Special attention must be devoted to building up the physical facilities of educational institutions. The development of model and experimental school plans that take into account the characteristics of the contemporary educational process and education of children from the age of six must be accelerated.

It is suggested that party committees take steps to enhance the influence of the primary party organizations at schools on the selection, assignment, and indoctrination of teacher cadres, raising the level of the educational and indoctrination process, and establishing a creative atmosphere and healthy moral microclimate in every pedagogical collective. More attention must be given to organizing political information for teachers and students and coordinating the activities of the school, family, and community. Questions of parent performance of their duties to raise children and prepare them for labor should be discussed regularly at meetings of party organizations and labor collectives. Sponsorship of general educational schools by industrial enterprises, organizations, institutions, kolkhozes, and sovkhoses should be expanded by every means.

The initiative of Ukrsovprof, the Central Committee of the Ukrainian Komsomol, and the Ukrainian SSR Ministry of Education to conduct a republic inspection of the work of labor collectives to sponsor schools in 1983 is approved.

Specific Proposals for Improved Vocational Guidance

Kiev EKONOMIKA SOVETSKOY UKRAINY in Russian No 10, Oct 82 pp 84-87

[Article by B. Andriyevskiy, candidate of pedagogical sciences: "The Problem of Training Worker Cadres and Vocational Guidance of Students"]

[Text] Scientific-technical and social progress make new, higher demands on people. In labor activity the decisive features are the worker's vocational knowledge, his breadth of outlook, ability to improve himself, and high moral qualities. It is no longer enough just to use machinery, raw materials, and working time efficiently. It is becoming especially important to insure the fullest possible correspondence between the psychophysiological, mental, and physical parameters of the individual and the demands which the particular vocation will make.

Random, unsubstantiated selection of a vocation leads to dissatisfaction, rapid fatigue, and often to production and moral traumas. It entails material expenditures for retraining of cadres and losses owing to mobility and migration, which ultimately is reflected in labor productivity and reduces the economic efficiency of use of the work force.

In recent years a shortage of cadres has been felt in the sectors of material production in connection with the strained balance of labor resources and the discrepancy that has occurred between the social-vocational orientation of some young people and the real needs of the economy. But industry and agriculture do not simply need labor, above all they need to receive educated, qualified young people.

As experience shows, the graduates of secondary vocational-technical schools meet the requirements of contemporary production most fully. The training received during education at vocational-technical schools is a solid foundation for the formation of a comprehensively developed, highly qualified worker who meets the demands of both today and tomorrow.

Significant changes have taken place in the vocational-technical education system in recent years. Physical facilities for education have been improved and broadened. Major work has been done on selection and assignment of engineering-pedagogical and administrative personnel at the schools and the level of education and indoctrination work has been raised to a qualitatively new level. In addition, with the establishment of secondary vocational-technical schools their graduates have practically unlimited potential for continuing their education. The result is a planned increase in admissions to educational institutions of the vocational-technical system and growth in its prestige. A sample study of the vocational aspirations of graduates of the eighth grade at general educational schools in the Ukraine, for example, showed that the proportion who want to go to vocational-technical schools more than doubled between 1971 and 1980. A rapid increase is also observed in the actual number of students at secondary vocational-technical schools; the rate of increase significantly exceeds growth in students at secondary specialized educational institutions. For the republic as a whole the total

number of students admitted to secondary vocational-technical schools during the 9th and 10th five-year plans rose approximately seven times.

At the same time, in some places the psychological reorientation of young people with respect to vocational-technical schools is still going slowly. There are more than a few cases where the schools are considered educational institutions for the undiligent and unsuccessful graduates of general educational schools. Unfortunately, an unfavorable opinion of the vocational-technical education system still exists in some families and even schools. The latter often try to transfer students who are difficult to indoctrinate and inclined to cause trouble to the vocational-technical schools, and to do so they frequently give inaccurate references. Needless to say, all these things make it harder to develop a desire in young people to acquire a skilled worker vocation. Some graduates of the general schools even form a negative attitude toward vocations in the production sphere. As a rule, preference is given to vocations that demand higher education such as doctor, engineer, military specialist, and jurist. The vocations of lathe operator, mechanic, and agricultural worker enjoy the least popularity. At the same time, many young people have an incomplete or inaccurate idea of the large-scale occupations and ways to acquire them, and they are not able to evaluate their capabilities relative to particular types of studies. Some young men and women selecting a vocation are guided by accidental factors and choose a specialization from a desire to imitate friends. For example, a questionnaire survey of 800 students in the second and third years at secondary vocational-technical schools in a number of oblasts of the Ukraine showed that about half of the students entered the schools "on the advice of comrades." More than 22 percent of them were guided by a desire to become independent quickly, and 14 percent wanted to acquire a vocation that they liked. It is noteworthy that six percent of those surveyed entered vocational-technical schools on the recommendation of teachers and parents. As we see, the role of the school and family in orienting young people to a worker vocation in the material and nonmaterial spheres of production is quite minor.

Purposefully shaping socially valuable vocational orientations is becoming more important today than ever before. First of all, based on existing proportions of employment of the population in national economic sectors and on the demographic situation, it may be assumed that the most realistic prospect for most graduates of general educational schools is to become a skilled worker in the material or nonmaterial spheres of labor. Furthermore, the introduction of universal secondary education prolongs the period of study for young people and, naturally, increases the age at which they begin labor activity. It must also be kept in mind that the rise in the standard of living and improvement in housing and domestic conditions has a certain effect on the labor indoctrination of young people. Thus, the reduction of labor expenditures in everyday life (central or steam heat, gas hookups, availability of domestic appliances, and the like) reduces the family's opportunities for labor indoctrination of children, especially in urban areas. In addition, the improvement in well-being, growth in family income, and simultaneous decline in the birthrate often lead to exceeding the norms of reasonable expenditures for children, to excessive concern for them. One can meet parents who, attempting to "prolong childhood," free the child or adolescent from elementary types of work to take care of themselves.

In this connection it is relevant to cite the words of L. I. Brezhnev at the 17th Komsomol Congress, where he emphasized that the desire of parents to give children a good life is understandable in human terms." But sometimes a desire for good proves harmful to the child. Some parents appear to think this way, that there will be time for the child to work later.

"This gives rise to dependency and lack of respect for labor, and ultimately the young person will find himself in a difficult situation when selecting a place in life. He will not be suited for work."¹

It follows from what has been said that questions of labor indoctrination in general and vocational guidance in particular demand further improvement taking into account the economic and social-domestic conditions of the real life of Soviet people today.

The fundamental element of vocational guidance at the present time is, of course, the general educational school. The school in fact prepares the preconditions for choice of a vocation. It is there that the student is indoctrinated and receives knowledge. It is there that his worldview and personal characteristics are mainly shaped and labor training and the testing of his capabilities take place. The successes of our schools in this respect are common knowledge. At the same time, the level of vocational guidance training in the schools leaves much to be desired. Vocational guidance work is ordinarily done on an irregular basis and sometimes without adequately qualified personnel. The reason for this situation is, on the one hand, the fact that the teachers assigned to these duties do not have appropriate training. On the other hand, there are still very few scientifically substantiated and readily accessible recommendations on conducting vocational guidance in school. Furthermore, the schools do not have materials that show the essential features of the vocations, the need for them, and trends in structural changes in the composition of the work force. Finally, the complexity of the indoctrination and educational tasks being performed by schools leaves the teacher little time for vocational guidance activities. It is not surprising that a significant number of young people form their vocational aspirations not as the result of purposeful work taking into account individual characteristics and national economic needs, but rather under the influence of unqualified comrades, television programs they have watched, and advertisements. As a result, almost half of the students at vocational-technical schools who were questioned said their opinion of the vocation they are studying had changed completely from the idea of it which they had before coming to school. It would appear that poor information or, more correctly, ignorance of the vocation which the graduates of general educational schools intend to acquire can be considered one of the reasons that students later do not want to work in the vocation they acquired at school. For example, the results of a questionnaire survey show that already by the second year of study at the vocational-technical school about 21 percent of the students had a negative attitude toward their future vocation and would take an opportunity to transfer to another school and acquire a different specialization if it were possible.

Naturally, most graduates of the vocational-technical schools do ultimately acquire and refine the necessary personal and vocational qualities during the

¹ L. I. Brezhnev, "Leninskim Kursom. Rech'i i Stat'i" [By a Leninist Course. Speeches and Articles], Vol 5, Moscow, Politizdat, 1976, p 47.

process of education and indoctrination conducted by party, Komsomol, and trade union organizations and engineering-pedagogical personnel. But with all the objective and subjective weaknesses of questionnaire surveys, still the findings indicate a need for further improvement in vocational orientation work in all its many different aspects. It is critically important to set up a uniform state system for vocational guidance. We are speaking of practical realization of the theoretically developed fundamentals of vocational guidance: viewing all of its components as a single set of interrelated and mutually dependent elements; consistency and continuity of purposeful influence on the individual over time; viewing vocational orientation work as an organic part of the process of education and communist indoctrination of the adolescent generation; knowledge of the proportions and trends in employment of the population of the region by economic sectors and knowledge of additional needs for workers in particular vocations or groups of vocations; knowledge of the vocational description (that is, the requirements that vocations make of the worker) for the large-scale occupations; qualified study of the physical and psychophysiological characteristics of each student and of their interests and vocational aspirations.

The formation of vocational guidance values, as the foundation for choice of a vocation, depends on many factors and accompanying circumstances: the work of the school, the influence of the family and mass communications media, the attractiveness of the particular occupation, the physical and psychophysiological condition of the individual, fashions, and the like.

Therefore the first thing necessary is to regulate the range of tasks and duties of each element of the vocational guidance system more precisely. In the second place, if the hypothesis of the enormous potential capabilities concealed in the early childhood years receives scientific confirmation, the social role of preschool institutions in development of the individual will increase significantly. Therefore, we must think about the usefulness of "shifting" or at least deepening preliminary vocational guidance information given in preschool institutions for children.

In the third place, it can be stated that one of the most important aspects of the work is lacking in the vocational guidance system. This is a study of the personal characteristics and physical data of the students. In fact, for the most part "only one facet of the interrelationship between the vocation and the person is considered, that is the vocation for the person, while the other aspect, the person for the vocation, is taken into account less."² In addition, there is not purposeful study of the interests and labor aspirations of the young people. But consideration of the individual characteristics and vocational aspirations of young people entering labor activity follows from the fundamental objective of all vocational guidance work: an optimal combination of national economic needs for workers and their objective characteristics.

² V. M. Nemchenko, "Mobility of Labor Resources," VESTNIK MGU, SERIYA "EKONOMIKA", No 1, 1974, p 69.

There is no question that general educational schools today study the individual capabilities and inclinations of their students as much as possible. Some enterprises carry out a job selection procedure for young people coming to work. But to put the question of vocational selection on a truly scientific basis it is necessary to set up an effective service for studying personal characteristics, interests, and vocational aspirations.

The following structure of the system for vocational guidance work in school and preschool institutions for children appears wise. It is desirable to concentrate preliminary information on vocational guidance at preschool institutions. For this purpose the education and indoctrination programs must envision 1-2 hours a week beginning with the middle group. During the process of this work the children will form their initial ideas of human labor activity and the various types of production processes. The efforts of the pedagogical collective are directed to instilling children with independence, organization, discipline, attentiveness, and other qualities that are necessary to a person in any vocation. The programs must devote a large place to development of labor habits and skills in the children.

But mechanically shifting the beginning of preliminary vocational guidance information to an earlier age cannot by itself guarantee success, of course. The main thing necessary for a positive solution to this problem is to raise indoctrination work at preschool institutions for children to a qualitatively new level.

It is desirable to concentrate vocational education, as one of the key aspects of vocational guidance, at the general educational school. It would be sensible to envision a regular staff position of vocational guidance teacher who coordinates and manages all vocational guidance work at the school. This would have to be a specialist who not only has a broad knowledge of the natural sciences and humanities, but also possesses thorough psychological and pedagogical training. His duties would include maintaining constant contact with regional enterprises, institutions, and other elements of the vocational guidance system. The vocational guidance office would naturally be under his charge. The vocational guidance specialist must provide methods and practical help to teachers and class directors in vocational guidance work, regularly inform them of changes taking place in the structure of the labor force, and make them familiar with the vocational descriptions of the most common occupations. His duties would also include managing vocational guidance activities conducted by the school Komsomol organization and school vocational guidance work with parents.

It would be a mistake to think that the vocational guidance specialist can point out a specific vocation for each graduate. The school vocational guidance specialist must knowledgeably help each student find the main area in which to choose a vocation that suits his personal characteristics and capabilities. The idea of vocational guidance teachers has already been discussed in the press. Some publications, in particular V. I. Korikov's article, attempt to give an economic substantiation of the usefulness of training broadly educated vocational guidance specialists.³

³ See V. I. Korikov, "The Economic Wisdom of Training Broadly Educated Vocational Guidance Specialists," in "Ekonomika i Organizatsiya Narodnogo Obrazovaniya" [The Economics and Organization of Public Education], Moscow, 1975, p 88.

It would be efficient to organize a special service on the rayon scale for effective functioning of the next element of vocational guidance work, vocational consultation. The staff of this service should consist, as a minimum, of a doctor, a psychologist, a sociologist, a pedagog, and an engineering-technical worker. The principal duty of this service would be qualified study of the individual psychophysiological and physical characteristics of the students: type of nervous system, type of temperament, abilities and inclinations, reaction speed, emotional state, muscle activity, physical condition, and the like. As the result of such examination and consideration of the student's system of attitudes toward vocations they work out concrete recommendations on his choice of a vocation. The vocational guidance specialist, class directors, and parents, as well as the student himself, of course, must be informed of the results of the examination. The availability of information on the psychophysiological characteristics of the students makes it possible, for one, to carry on more purposeful vocational guidance work at the school and, for two, will unquestionably enhance the element of consciousness in evaluating one's own internal resources during the process of selecting the best future vocation.

In the eighth grade the vocational aspirations of students are determined more specifically and their paths for receiving secondary education are determined. In the ninth and 10th grades they receive further vocational information. It is considered that vocational guidance work in the upper classes has its own distinctive features (there is an interest in a specific occupation or sector of activity) and it is essential to use the system of elective classes, study circles, and production training combines and brigades to create conditions for practical testing of the solidness of the vocational choice. In the concluding stage of vocational guidance vocational propaganda is especially important; this means agitation to master some particular vocation (based on the needs of the region). Another job of the school is to give all the help it can in deciding the question of job placement for its graduates.

When speaking about improving vocational guidance work it is essential to provide for centralized supply of vocational descriptions for the principal groups of vocations to the schools. The appropriate scientific research institutes could be assigned to work out methodologies for studying the psychophysiological and physical traits of students. As for material expenditures to train and support vocational guidance specialists and specialists in the service for studying the personal characteristics of students, according to our calculations successful selection of vocations by just 2-3 percent of the graduates of general educational schools would cover these expenditures.

Thus, the problem of choosing a vocation in conditions where the structure of occupations is changing rapidly and the demands on the individual worker are steadily growing creates certain difficulties in guiding young people. At the same time, where the physiological capabilities of a person do not fit the requirements of production this has a negative effect on the person's basic activities and causes enormous damage to the entire economy. Thus we must talk about further improving the work of all elements of the vocational guidance system. The proposals made in this article are not indisputable and, unquestionably, require thorough experimental testing. Nonetheless, the author believes that their introduction would significantly raise the level of vocational guidance work and promote the creation of more favorable conditions for individual activity and more effective training of the main productive force of society: labor resources.